
APPENDIX R

TRAFFIC IMPACT ASSESSMENT



TRAFFIC IMPACT ASSESSMENT

DALSWINTON QUARRY EXPANSION

LOT 72 DP 1199484
511 DALSWINTON ROAD, DALSWINTON

PREPARED FOR: ROSEBROOK SAND AND GRAVEL

AMENDED JANUARY 2020

REF: 18/035

**TRAFFIC IMPACT ASSESSMENT
ROSEBROOK SAND AND GRAVEL****QUARRY EXPANSION
LOT 72 DP1199484
511 DALSWINTON ROAD, DALSWINTON**

Intersect Traffic Pty Ltd (ABN: 43 112 606 952)

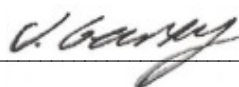
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Date 20th January 2020**Disclaimer**

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1.0 INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) has been engaged by Rosebrook Sand and Gravel (RSG) to prepare a traffic impact assessment for the expansion of quarry operations at its Dalswinton Quarry at Lot 72 DP1199484, 511 Dalswinton Road, Dalswinton. Vehicular access to the quarry is provided from the Golden Highway (SH 27) via a recently upgraded Auxiliary Right Turn / Basic Left Turn (AUR/BAL) access intersection approximately 8.2 km's west of Edderton Road and 7 km's east of Denman.

The proposed development is expected to extract approximately 12.5 million tonnes of material over an expected life of twenty five years. The quarrying operation will expand across 89 ha of the site, with an estimated annual maximum production of 500,000 tonnes per year. The proposed development will also include reworking of the previous Stages 1 and 2 to recover fine aggregates previously discarded. Progressive rehabilitation will occur as part of site operations to return the land to grazing uses at the end of the operations. Details of the Quarrying expansion are provided in the site plan provided in **Attachment A**. It is noted that the works include a realignment of part of the internal haul road near the quarry site.

This report has been prepared to support a State Significant Development application to the Department of Planning and Environment (DPE) and allow the various government departments and Muswellbrook Shire Council (Council) and NSW Roads and Maritime Services (NSW RMS) to assess the proposal in respect of its impact on the local and state road network.

This report presents the findings of the traffic assessment and includes the following;

- ◆ An outline of the existing situation in the vicinity of the site.
- ◆ An assessment of the traffic impacts of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities.
- ◆ A review of parking, public transport, pedestrian and cycle way requirements for the proposed development, including assessment against Council and the NSW Roads and Maritime Services (RMS) standards and requirements.
- ◆ Presentation of conclusions and recommendations.

In respect of the SEARS issued for this project the main issues contained within the Traffic and Transport requirements and the NSW RMS advice have been addressed as follows;

- ◆ Current Traffic Volumes – **Section 4.**
- ◆ Traffic Generation – operational and construction – **Sections 9 & 11.5.**
- ◆ Trip Distribution – **Figure 2.**
- ◆ Haulage Routes – **Figure 1.**
- ◆ Traffic Impacts – **Section 11.**
- ◆ Road Infrastructure Upgrades – None required – see **Section 11.**
- ◆ Road Safety & Access Intersection Assessment – **Section 11.3**
- ◆ On-site parking – **Section 11.6.**
- ◆ Alternative Transport Modes – **Section 11.7.**

2.0 SITE LOCATION

The subject site and haulage routes are shown in **Figure 1** below. It is located adjacent to the Hunter River on the southern side of the Golden Highway, Dalswinton approximately 7 km east of Denman and 4.6 km's south of the Golden Highway. The quarry is accessed via a 6.5 km long access road from the Golden Highway at a location approximately 8.2 km west of Edderton Road. The site contains an existing quarry. The major haulage route from the quarry is to the west via the Golden Highway and Denman Road to connect to the New England Highway while some product is sold towards the east to Jerry's Plains and Singleton via the Golden Highway and Putty Road to the New England Highway. The main haulage routes from the site are also shown in **Figure 1** below.

This site is primarily titled and addressed as Lot 72 DP1199484, 511 Dalswinton Road, Dalswinton and the quarry will cover an area of approximately 89 ha.

Pursuant to the Muswellbrook LEP (2009), the site is zoned as RU1 – Primary Production. **Photographs 1** and **2** below shows the vehicular access to the site from the Golden Highway and the internal access road. The proposed extraction areas are shown in **Attachment A**.

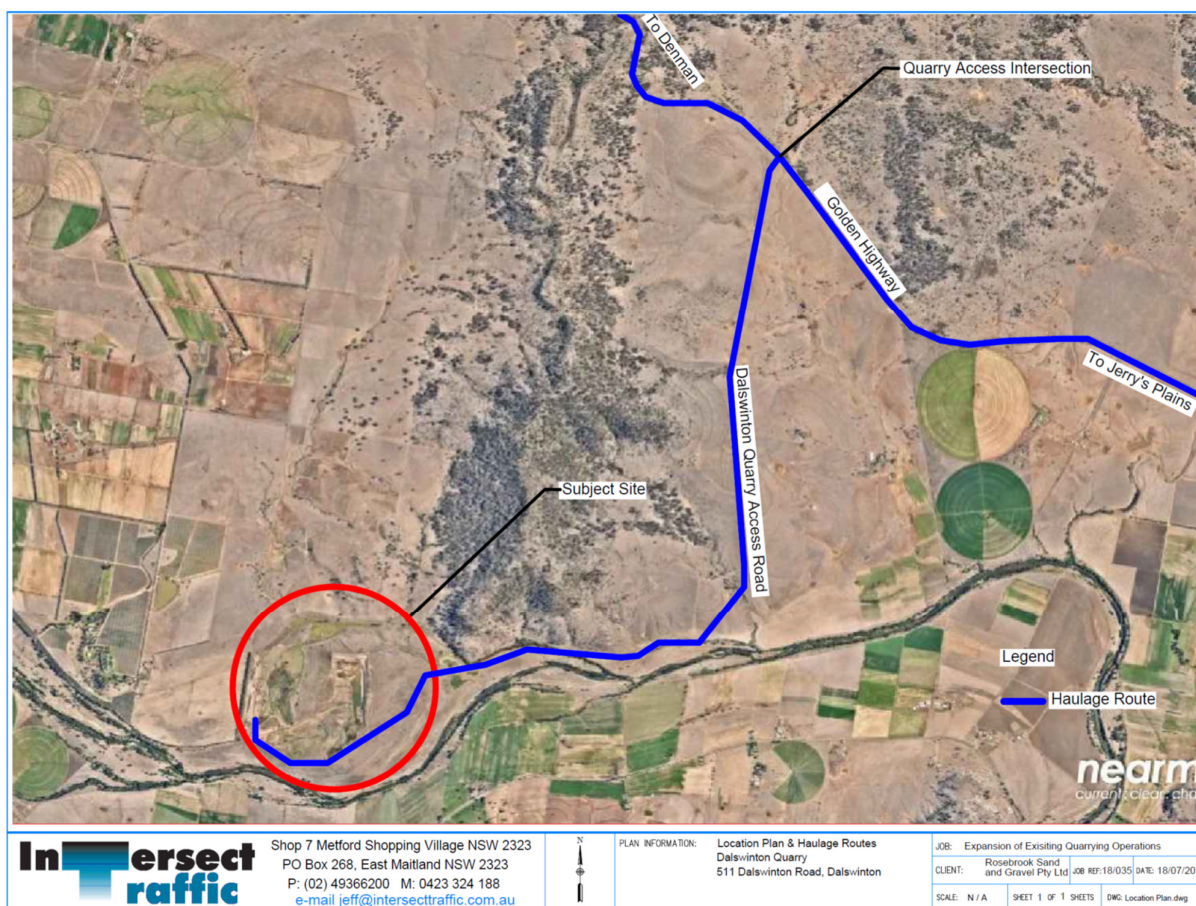


Figure 1 – Site Location & Haulage Routes



Photograph 1: Existing Quarry Access Intersection – Golden Highway



Photograph 2: Existing Quarry Access Road

3.0 EXISTING ROAD NETWORK

The existing quarry operates with its main access off the Golden Highway (SH27) via an upgraded AUR / BAL rural intersection as shown in **Attachment B**. Material extracted from the site will generally service the local lower Hunter Valley market from Muswellbrook / Denman / Sandy Hollow to Singleton. The likely transport routes are shown in **Figure 1** with the latest 12 months of weighbridge data indicating 55 % of deliveries have an origin / destination to the west and 45 % of deliveries have an origin / destination to the east.

3.1 –Golden Highway

The Golden Highway is part of the state highway network (SH27) and is also the care and control of NSW RMS. Under a functional road hierarchy it would be classified as a major arterial road with a function to connect the regional areas of the lower Hunter and Central NSW areas i.e. Singleton to Dubbo. It is the major transportation route for towns such as Jerry's Plains, Denman, Sandy Hollow, Merriwa, Dunedoo and Dubbo. In the Dalswinton area it is generally a two way sealed rural road with a single 3.5 metre travel lane in each direction and varying sealed shoulder widths. It is centre line marked and has a 100 km/h speed zoning. At the time of inspection, the Golden Highway was in good condition and considered suitable for use by heavy vehicles associated with the quarry.

The Golden Highway / Quarry Access Road intersection is constructed as a give way controlled AUR/BAL channelised (line marking) rural intersection providing an appropriate level of intersection control for this intersection with Golden Highway traffic having priority.



Photograph 3: Golden Highway near Quarry access.

3.2 – Quarry Access Road

The Quarry Access Road is a 6.5 km long private road under the care and control of the operators of Dalswinton Quarry (RSG) and subject to maintenance in accordance with development conditions associated with the approval of the quarry. It is an unsealed road approximately 6 to 6.5 metres wide and will require some realignment near the quarry site as a result of this development. The road is subject to regular grading and watering and therefore is generally in good condition as required by the quarry's consent. A 60 km/h speed zone is signposted along the road though enforcement is up to the quarry operators and it is not regulated or enforced by NSW Police. Overall the access as shown in **Photograph 2** is considered suitable for the development with the proposed realignment.

4.0 TRAFFIC VOLUMES

To determine existing traffic volumes on the road network Intersect traffic engaged Northern Transport Planning and Engineering (NTPE) to undertake a traffic classifier count on the Golden Highway in the vicinity of the Quarry access. NTPE placed classifiers on the Golden Highway 500 metres south east of Denman Road for a 1 week period commencing Tuesday 29th May 2018

The classifier count identified that for the Golden Highway the AM road network peak was between 11 am and 12 pm on Friday 1st June 2018 while the PM road network peak occurred between 12 pm and 1 pm on the same day. The existing percentage of heavy vehicles within the traffic flows on the Golden Highway was found to be approximately 15 %.

The peak hour data recorded during the survey period was as follows;

- ◆ AM peak = 236 vph; and
- ◆ PM peak = 269 vph

Assuming a 2 % per annum background traffic growth rate on the Golden Highway the predicted 2028 traffic volumes would be;

- ◆ AM peak = 288 vph; and
- ◆ PM peak = 328 vph.

These peak two-way mid-block road network traffic volumes have been adopted in this assessment.

The weighbridge data from the quarry has indicated that the average heavy vehicle traffic generation from the site is on average 20 truckloads (average weight range between 27- 33 tonnes) of materials per day under the current consent. This would equate to an average peak hour traffic generation of approximately 2 trucks per hour based on a 10 hour operating day though isolated peak flows may occur with larger orders. For assessment purposes the average peak hour flows have been adopted and it is assumed each delivery will result in an outbound trip and an inbound trip in the peak hour. i.e. Peak heavy vehicle traffic from the current quarrying operation is 4 vph (2 inbound and 2 outbound).

In regard to employee light vehicle movements with up to 12 site based employees, employee light vehicle movements would only equate to up to 12 vph during each of the AM and PM peaks associated with these employees arriving at the site in the AM and leaving the site in the PM.

Therefore for assessment purposes the existing peak hour traffic generation from the site has been determined as 16 vph.

5.0 ROAD CAPACITY

Table 4.5 of the NSW Roads and Maritime Services (RMS) RTA's *Guide to Traffic Generating Developments* provides some guidance on likely levels of service being experienced on two lane two way rural roads for different terrain types. This table is reproduced below.

Table 4.5
peak hour flow on two-lane rural roads (veh/hr)
(Design speed of 100km/hr)

Terrain	Level of Service	Percent of Heavy Vehicles			
		0	5	10	15
Level	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290
Rolling	B	500	420	360	310
	C	920	760	650	570
	D	1370	1140	970	700
	E	2420	2000	1720	1510
Mountainous	B	340	230	180	150
	C	600	410	320	260
	D	1050	680	500	400
	E	2160	1400	1040	820

The data for Table 4.5 assumes the following criteria:

- terrain level with 20% no overtaking.
- rolling with 40% no overtaking.
- mountainous with 60% no overtaking.
- 3.7 m traffic lane width with side clearances of at least 2m.
- 60/40 directional split of traffic.

Source: - RTA's *Guide to Traffic Generating Developments* (2002)

Note: The terrain level for the area surrounding the site is considered to satisfy the criteria for level terrain.

With the existing traffic volumes for the local road network provided in **Section 4** of this report the above table shows that the level of service (LoS) for motorists on the Golden Highway would be a level of service A as existing traffic volumes are below the threshold for a LoS B for 15 % heavy vehicles in level terrain of 530 vtpd.

The desirable LoS for rural roads before upgrading works to increase the capacity of the roads need to be considered is a LoS C though a LoS D may still be acceptable in certain circumstances.

On this basis the road capacity of the Golden Highway is considered to be 1,410 vtpd. This assessment therefore has shown that there is significant spare two-way mid-block road capacity within the Golden Highway to cater for the additional traffic generated by an increase in annual production from the Dalswinton Quarry.

6.0 ROAD NETWORK IMPROVEMENTS

A review of the NSW RMS and Muswellbrook Council's websites has not identified any major road network improvements in the area that would result in increased capacity within the state and local road network. Maintenance work on the Golden Highway would be carried out in line with NSW RMS works programs.

7.0 ALTERNATE TRANSPORT MODES

Public transport availability to the site is non-existent. None of the local bus companies currently run regular routes along the Golden Highway though school bus services would run along the Highway. As the development site is more than 6 km from a public road the development does not currently generate a demand for public transport services. The majority of employees are provided with company vehicles and encouraged to car pool with those that do not have company vehicles. This situation will not change with the expansion and increased production of the quarry resulting from this development.

Being a rural area there are no constructed footpaths therefore facilities for pedestrians are also non-existent. Pedestrians walking along the local and state road network would be required to use the unformed verges or utilise the road shoulder where necessary. Similarly, there are no designated on or off road cycle ways in the area. Therefore cyclists using the road network would either need to use the formed road shoulders or share the traffic lanes where necessary. Again the development does not generate any pedestrian or cycle traffic and this will not change with the expansion and increased production of the quarry resulting from this development.

There are also currently no alternatives to the use of road haulage of material to and from the site.

8.0 DEVELOPMENT PROPOSAL

Dalswinton Quarry has been extracting decorative gravel and aggregates from the western part of the subject site under previous consents since 1986. As the quarry approaches the end of its approval period the owners see the potential to expand the operations to the eastern part of the site. With the recent changes in the market demand there is also the opportunity to re-work the previously extracted areas to recover the fine aggregates (less than 10 mm) and larger aggregates, which were previously returned to pits as reject material.

RSG estimates significant quantities of reserves in the existing footprint as well as adjoining areas which would allow for operations to continue for another 25 years. The extraction rate will depend on the market dynamics and it is anticipated that a maximum of 500,000 tonnes of materials per annum will be produced during peak demand periods. An indicative layout of the proposed development is attached. An accurate footprint of the quarry site will be determined during the preparation of the EIS once a more detailed constraints analysis and feasibility assessment has been undertaken.

It is proposed to have two working areas within the site. Reworking over approximately 50 ha of land within Stages 1 and 2 of the current DA will constitute Work Area 1. Approximately 39 ha of unmined land to the east of this footprint will form Work Area 2 (see Indicative Layout Plan). Each area will be worked simultaneously and followed by rehabilitation. The proposed quarry footprint is shown in **Attachment A**.

Gravel will be extracted by a hydraulic excavator and loaded into haul trucks for transfer to the existing processing plant located in the south-east part of the site. Extracted materials will be transported to the processing area for screening and crushing to produce a full range of decorative gravel, crushed aggregate, road base and stemming material. The products will then be stockpiled on site before being loaded into trucks for delivery to markets in the Hunter Valley and Sydney regions. Note the existing development has approval for 12 employees on site and the proposed expansion will maintain this limit on employee numbers. It is anticipated to have approximately 60,000 tonnes of materials in the stockpile area, at any one time, to meet the market demand. The height of the stockpile will be limited to 6m and run parallel to the River. The product haulage will be along the existing haul road to the north-east of the site, which connects to the Golden Highway. A minor realignment to the haul road in the southern part of the site will be required to allow extraction in the eastern part of the site.

9.0 TRAFFIC GENERATION

Based on a maximum of 500,000 tonnes per annum and the number of operational days of the quarry per annum (50 weeks and 5.5 days per week), the annual average daily truck movements would be 60 trucks per day or 120 trip movements (on the basis there is an outbound and inbound movement associated with each truck load and the average truck load is 30 tonnes). The approved quarry opening hours are 5.00 am to 12.00 am (midnight) Monday to Friday and 5.00 am to 1.30 pm on Saturday's which results in an approved 107.5 hours of operation. As the quarry does not generally operate during all these hours, a daily operating period of 10 hours has been conservatively adopted for assessment purposes. This results in a total average hourly truck movement of 12vtpd.

Therefore the average hourly traffic volume from the quarry with the increased production to 500,000 tonnes per annum will be;

$$\text{Average peak hourly traffic} = 12 \text{ vtpd (deliveries)} + 12 \text{ vtpd (staff)} = 24 \text{ vtpd.}$$

This only represents an increase of 8 vtpd on current average peak hourly traffic volumes from the site. With 55 % of current deliveries having an origin / destination to the west and 45 % of current deliveries having an origin / destination to the east and assuming 50% of the additional delivery traffic is outbound and 50 % is inbound then the additional traffic trip distribution from the quarry used in the assessment of the road network is as shown below in **Figure 2**.

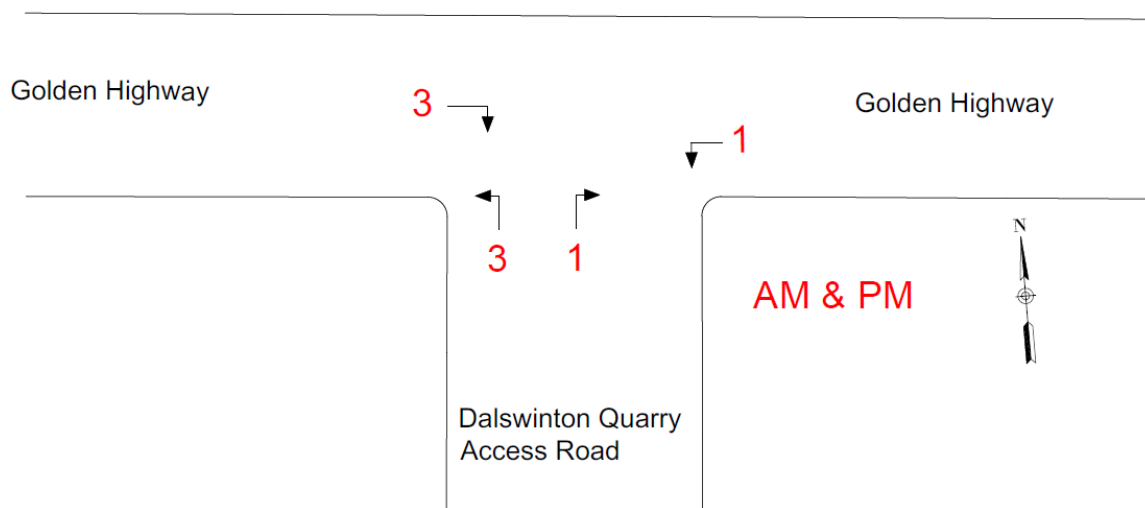


Figure 2 – Additional Development Traffic Trip Distribution

Note the realignment of the internal road will be undertaken using plant and materials already on the site therefore this additional construction work will not generate any additional traffic on the external public road network. Therefore it will not have any impact on the local and state road network near the site.

10.0 OTHER DEVELOPMENTS

There are no other known major developments in the area that would be likely to increase traffic volumes on the Golden Highway beyond the normal background traffic growth limits.

11.0 TRAFFIC IMPACTS OF DEVELOPMENT

The main traffic impacts of a quarry development lie in the areas of traffic efficiency, amenity, road safety, road pavements and alternate transport modes. Within these areas the main issues usually relate to the levels of service (LoS) experienced on the road network particularly at intersections, the impacts of road noise and dust, the geometric standards of the haulage routes, the construction standard of the haulage routes and the availability and accessibility to alternate transport modes.

11.1 Traffic Efficiency

From the assessment of existing traffic volumes and road capacity it can be seen that the local road network around the site is currently operating satisfactorily. Motorists on the local road network are currently experiencing a high level of service with little or no delays.

The impact of the increase of up to 92 vtpd or 12 vtpd during peak hour periods on the mid-block traffic volumes on the road network would be to increase existing peak hour flows on the Golden Highway to 248 vtpd in the AM peak and 281 vtpd in the PM peak. These would increase to 300 vtpd in the AM peak and 340 vtpd in the PM peak in 2028. These values are still well below the two-way mid-block capacity of the Golden Highway determined as 1,410 vtpd in **Section 5**.

This assessment shows the additional quarry traffic does not cause the two-way mid-block capacity of the local road network to be reached. Therefore the development does not adversely impact on the efficiency of the road network.

The traffic generated by the proposed development represents less than 5 % of existing traffic volumes on the local road network. This being less than the normal daily and seasonal variations in peak hour traffic will not have a noticeable impact on the operation of any intersections on the local and state road network. Generally further analysis of intersection operation is not required when traffic increases are less than 10 % of existing traffic volumes through the intersections.

The main intersection to be impacted by the development would be the quarry access intersection with the Golden Highway. In this regard it is noted even with the quarry expansion this intersection would operate with volumes well less than the thresholds for uninterrupted flow conditions contained in the following table sourced from Austroads *Guide to Traffic Management Part 6 Intersections, Interchanges and Crossings* for which the guide states when the volumes at an intersection are less than that shown in the Table, a detailed analysis to demonstrate adequate capacity is available is unnecessary.

Major road type ¹	Major road flow (vph) ²	Minor road flow (vph) ³
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Notes:

1. Major road is through road (i.e. has priority).
2. Major road flow includes all major road traffic with priority over minor road traffic.
3. Minor road design volumes include through and turning volumes.

Source: - Austroads *Guide to Traffic Management Part 6 – Intersections, Interchanges and Crossings*.

It is therefore reasonable to conclude that the proposed increase in quarry traffic from the proposed expansion of the quarry would not adversely impact on the local and state road network.

11.2 Amenity

Amenity issues for adjoining residents in regard to the traffic generated by a development usually relate to traffic noise and dust generation. In regard to dust generation, the existing external haulage routes are sealed while the internal haul road is sealed in appropriate locations with the quarry regularly watering the unsealed sections to ensure dust is not a nuisance. Dust from the haulage traffic will be also insignificant provided all loads are covered as required by law in NSW. The only dust generation issue from this development will relate to the internal operations of the quarry (addressed in a separate air quality impact report).

In terms of road noise, the operation of large haulage trucks can generate significant noise, particularly when returning to the quarry empty. Similarly, the internal operations of the quarry can also generate noise issues for adjoining residents. Both these issues are addressed in a separate noise impact assessment report.

11.3 Road Safety and Access

In terms of road safety the main issues that need to be considered are type of traffic, road geometry and intersection safety. An increase in traffic volumes increases the risk of traffic accidents and thus impacts on the standard of road geometry required for the road. The road geometry impacts on the safe travelling speed in a number of ways, including horizontal alignment, vertical alignment and lane widths. Intersections represent the major traffic conflict points on a road network and thus are a location of increased accident risk.

In terms of development traffic the main impact for this proposal is not so much the volume of traffic generated by the quarry but the type of traffic generated. Specifically, the quarry generates a high proportion of heavy vehicles, particularly rigid truck and trailer combinations. The road geometry and construction standard therefore needs to be appropriate for this type of traffic. In this regard as the quarry already operates it would be reasonable to conclude that the internal and external haulage routes are satisfactory for use by the additional haulage traffic. No increase in vehicle size for the haulage vehicles is proposed with this application.

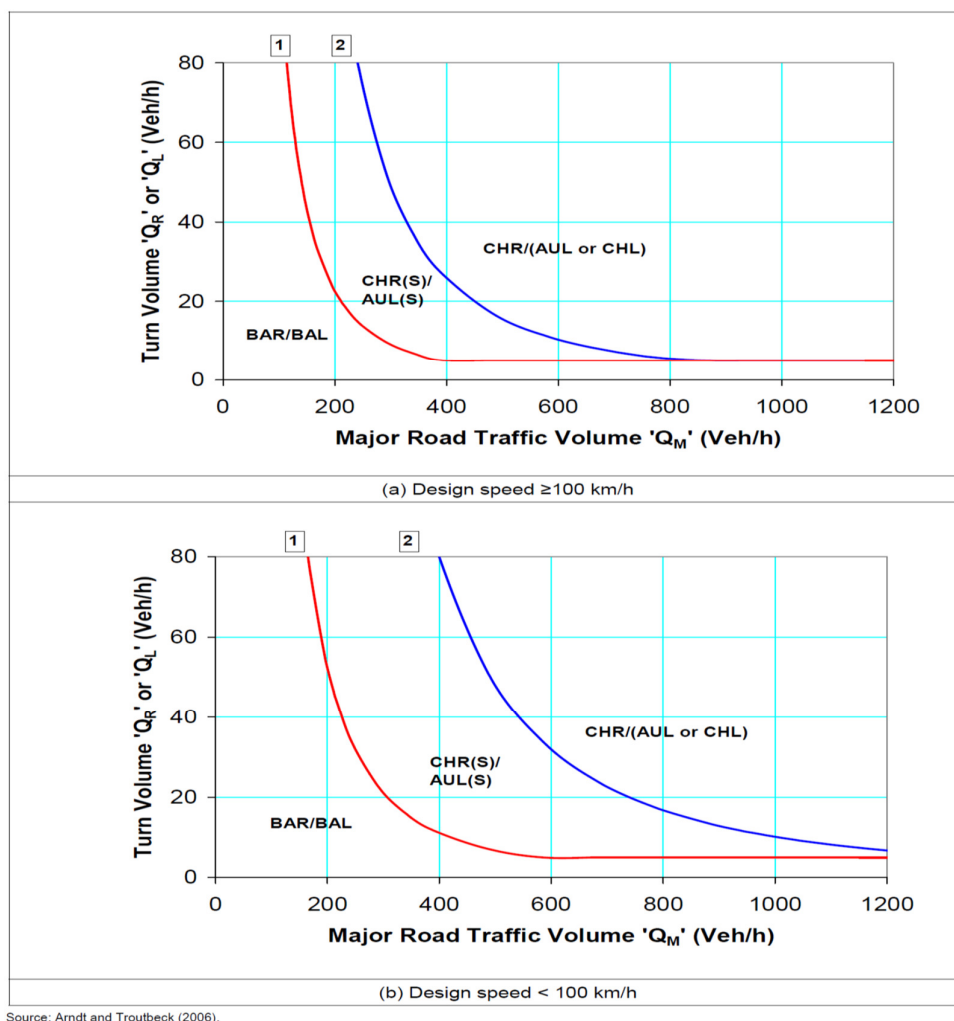
Existing pavement construction standards have been discussed in **Section 3.0** and it was found that the haulage route to the site is fully sealed with a minimum road width of 7.0 metres. Traffic volumes on the road network are all less than 500 vtpd; therefore a minimum sealed width of 7 metres would satisfy the minimum design requirements for road widths contained within the *Austrroads Guide to Road Design (2009)*.

Through visual assessment it is considered that the road alignment within the Golden Highway is suitable for the speed zoning currently regulated. It is also noted that the Golden Highway is already a designated B-Double route therefore has been previously assessed by NSW RMS as suitable for heavy vehicle traffic.

It is the area of intersection safety that is of most relevance for this proposal. Intersection safety is generally dependant on the amount of traffic passing through and turning at the intersection as well as the availability of sight distance and intersection geometry. In this case the main intersection on the haulage route of interest is the quarry access intersection with the Golden Highway.

By observation, the Golden Highway / Quarry access intersection has suitable road geometry and the available sight distance exceeds Austrroads requirements as specified within *Guide to Road Design (2009)*. The safe intersection sight distance for a 100 km/h speed zone is listed as 264 metres desirable or 234 metres minimum, while the approach stop distance is 179 metres desirable and 151 metres minimum. These requirements are easily met by the existing intersection (see **Photograph 3**).

The existing intersection has been constructed as an AUR / BAL intersection under old road design standards which under the current road design standards would equate to a modified BAR / BAL intersection. Turn lane warrants are provided in Figure 4.9 of *Austrroads Guide to Road Design – Part 4A – Unsignalised and Signalised Intersections* reproduced below.



Source: Arndt and Troutbeck (2006).

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

Source: - Austroads Guide to Road Design – Part 4A – Unsignalised and signalised intersections (2010).

For the entry access noting the use of graph (a) for a design speed of equal to or greater than 100 km/h, Q_R and Q_L a maximum of 11 vph and 6 vph post development and the major road traffic volume Q_{MR} of 272 vph and Q_{ML} of 129 vph requires the treatment of this intersection as a BAR / BAL intersection falling just on or below the red line in the figure above. As mentioned previously the intersection already meets this standard and would be suitable for use by the additional traffic generated by the quarry expansion.

Overall it is concluded that the local and state road network impacted by quarry traffic is suitably safe for use by the traffic exceeding or complying with at least all the minimum requirements of Austroads for rural road design.

11.4 Pavement Construction

The haulage route appears to be constructed of a suitable pavement for use by heavy vehicles given the existing condition of the road network and its current use by heavy vehicles. A visual assessment of the road pavement along the haulage route indicated that there were no major failures or areas of deterioration.

It is therefore considered that the road pavements on the existing haulage route from the quarry to the arterial road network are satisfactory.

11.5 Construction Traffic

There will be no additional construction traffic generated by the development with all works undertaken by existing staff utilising existing plant and materials on the site. Therefore, again it would be reasonable to conclude that construction traffic will not adversely impact on the local and state road network.

11.6 On-site parking

There is sufficient space within the boundaries of the quarry to provide suitable on-site car parking and manoeuvring areas for employees (12 off) and heavy vehicles (6 off) ensuring suitable and convenient forward entry and exit from the site for all vehicles.

11.7 Alternative Transport Modes

As previously discussed in this report accessibility to alternate transport modes for the development site is considered non-existent. No specific bicycle or pedestrian infrastructure is provided to the site and there is no public transport service to the site. The proposal however, will not increase the demand for alternate transport modes therefore it is considered that no new alternative transport mode infrastructure will be required by the proposed expansion of the quarry.

There is also no feasible alternative to road transport for haulage of the product out of the quarry.



12.0 CONCLUSION

This traffic impact assessment for the proposed expansion of the Dalswinton Quarry at Lot 72 DP1199484, 511 Dalswinton Road, Dalswinton has determined the following.

- ◆ The proposed quarry will operate with a maximum production output of up to 500,000 tonnes per year.
- ◆ The main haulage route used for transporting the extracted material from the site will be via the Golden Highway and Denman Road to Denman / Muswellbrook or via the Golden Highway and Putty Road to Jerry's Plain / Singleton.
- ◆ Current peak period traffic volumes on the Golden Highway near the site access have been measured as 236 vtpd in the AM peak and 269 vtpd in the PM peak.
- ◆ Heavy vehicle traffic on the local road network around the site was found to be in the order of 15 % of total traffic.
- ◆ The existing peak traffic volume generated by the Quarry has been estimated as 12 vtpd.
- ◆ The proposed extension to the quarry could increase traffic on the local road network by up to 80 vtpd or 8 vtpd during peak operating periods.
- ◆ The additional quarry traffic does not cause the two-way mid-block capacity of the local road network to be reached. Therefore the development does not adversely impact on the efficiency of the road network.
- ◆ The traffic generated by the proposed development represents less than 5 % of existing traffic volumes on the local and state road network. This increase being less than the normal daily and seasonal variations in peak hour traffic will not have a noticeable impact on the operation of any intersections on the local and state road network.
- ◆ The main intersection to be impacted by the development would be the quarry access intersection with the Golden Highway. In this regard it is noted even with the quarry expansion this intersection would operate with volumes well less than the thresholds for uninterrupted flow conditions contained in the following table sourced from Austroads Guide to Traffic Management Part 6 Intersections, Interchanges and Crossings. Therefore, the proposed increase in quarry traffic from the proposed expansion of the quarry would not adversely impact on the local and state road network.
- ◆ Amenity issues such as road noise and dust are covered in separate noise and air quality assessments of the quarry expansion.
- ◆ The local and state road network servicing the site is in good condition and is considered suitable in terms of road geometry, speed zoning and pavement construction for use by traffic generated by the quarry. It is noted the Golden Highway is already a classified heavy vehicle (B-Double) route.
- ◆ The existing quarry access intersection is considered suitable for use by the additional traffic generated by the quarry expansion.
- ◆ Construction traffic generated by the development will not adversely impact on the local and state road network.
- ◆ There is sufficient space within the boundaries of the quarry to provide suitable on-site car parking and manoeuvring areas for employees (12 off) and heavy vehicles (6 off) ensuring suitable and convenient forward entry and exit from the site for all vehicles.
- ◆ Alternative transport modes available to the site are non-existent and would not provide any benefit to the proposal. Therefore no additional infrastructure requirements in regard to alternative transport modes would be required. There is also no feasible alternative to road haulage of the product out of the quarry.

13.0 RECOMMENDATION

Having carried out this traffic impact assessment for the expansion of the Dalswinton Quarry at Lot 72 DP1199484, 511 Dalswinton Road, Dalswinton it is recommended that it can be supported as it will not have an adverse impact on the local or state road network near the site and complies with all requirements of Muswellbrook Council, Austroads and NSW Roads and Maritime Services (RMS).

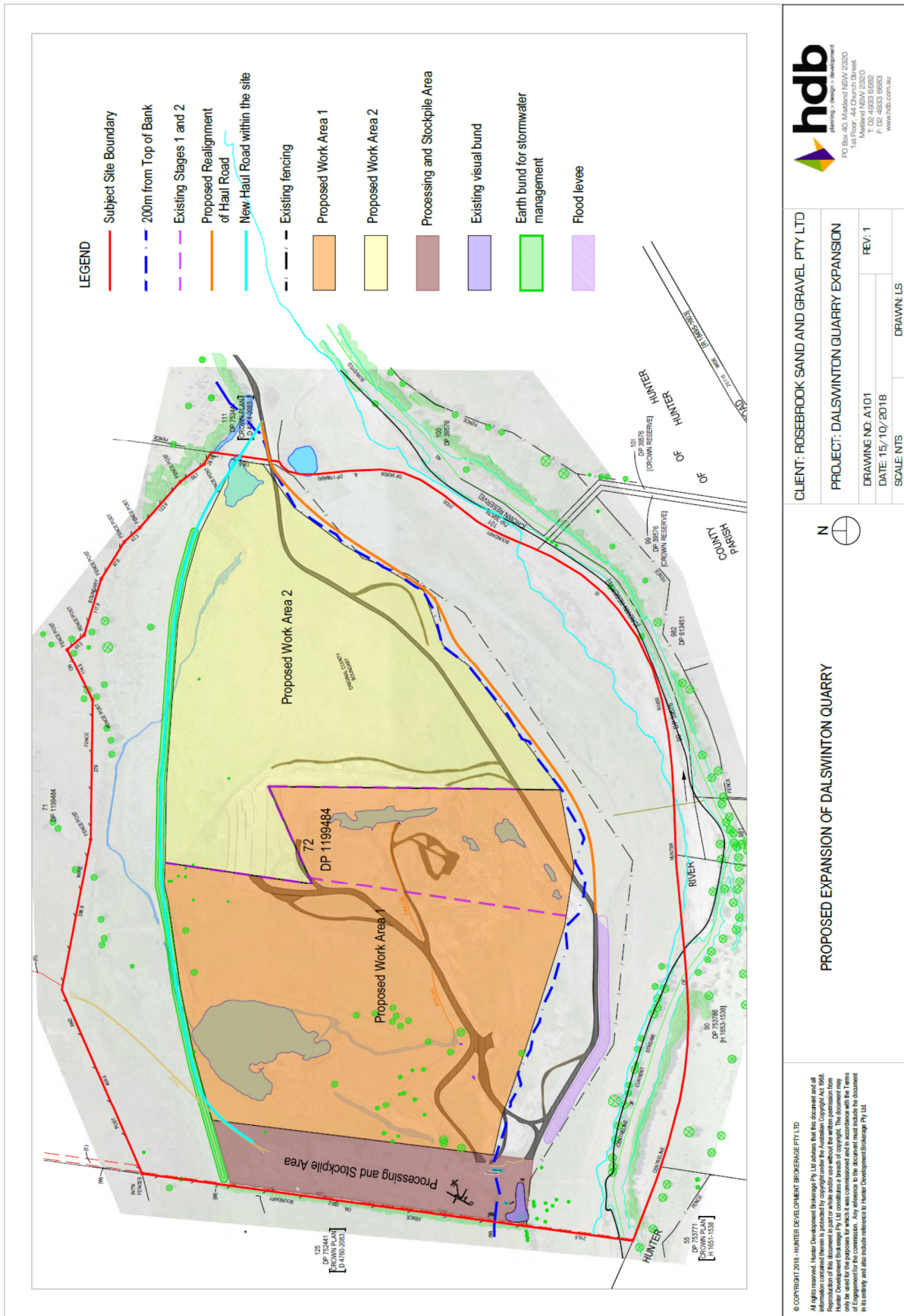


Jeff Garry BE, Masters of Traffic
Director
Intersect Traffic Pty Ltd



ATTACHMENT A

SITE PLAN



ATTACHMENT B

EXISTING ACCESS INTERSECTION

