Our Ref: STH09/01940/12
Contact: Chris Millet (4221 2570)
Your Ref: SSD 15_7090

17 May 2016

Margaret Kitton
Department of Planning and Environment
BY EMAIL: information@planning.nsw.gov.au

STATE SIGNIFICANT DEVELOPMENT 15_7090 – GUNLAKE QUARRY EXTENSION PROJECT

Dear Madam

Roads and Maritime Services (RMS) refers to the exhibition of the subject State Significant Development application.

RMS has reviewed the exhibited information and objects to the application in its current form. In this regard the following comments are provided for your consideration.

Predicted increase in traffic

RMS notes it is proposed to increase annual production from 750,000 tonnes per annum to 2,000,000 tonnes per annum. Based on the developers' predictions contained in the Section 10.3.1 of the EIS, RMS notes the following:

- The quarry currently operates with an average of 164 truck movements per day with a peak loading rate of 11 trucks per hour.
- With the development, it is predicted truck movements would increase to an average 440 movements per day with up to 690 movements on a busy day. A peak loading rate of 29 trucks per hour is stated to apply for both.

To manage the impacts to the Hume Highway, RMS notes the developer proposes to construct a 500m long (including taper) left turn northbound acceleration lane on the Hume Highway at the intersection of Red Hills Road before 2025.

Existing behaviour of truck drivers at Hume Highway and Red Hills Road

RMS has undertaken observations of heavy vehicles entering the Hume Highway from Red Hills Road and has significant concerns regarding the behaviour in which truck drivers perform this left turn movement.

Heavy vehicles have been witnessed on multiple occasions to turn directly onto the shoulder of the Hume Highway to accelerate and then merge into the travel lane of the Hume Highway without stopping and waiting on Red Hills Road for an appropriate gap. RMS has documented these observations (refer to Attachment A) and captured video of these observations (provided to the Department of Planning and Environmental separately on USB).

This manoeuvre interrupts the flow of traffic and forces through traffic on the Hume Highway to brake and/or merge across into the fast lane to avoid a potential collision with the heavy vehicle. RMS considers this manoeuvre is creating the potential for a serious road safety

issue.

RMS also highlights this manoeuvre is causing significant damage to the shoulder of the Hume Highway. The shoulder is not designed for heavy vehicles to use as an acceleration lane, particularly when the trucks are fully loaded.

RMS recognises Gunlake Quarry (Gunlake) is not the only source of trucks entering the Hume Highway from Red Hills Road. RMS' observations found around 75% of trucks enter the Hume Highway from Red Hills Road by using the shoulder. RMS is convinced a reasonable proportion of these trucks are associated with Gunlake[1].

Based on all of the above, RMS does not believe the developers' proposal to provide the acceleration lane before 2025 is sufficient to mitigate the impacts of the development. RMS strongly considers the left turn northbound acceleration lane on the Hume Highway at Red Hills Road would need to be constructed before any increase in truck movements. In this regard, RMS advises:

- The acceleration lane length would at a minimum need to comply with Austroads Guide to Road Design and the relevant RMS Supplement for a design speed of 110km/h for light vehicles.
- The swept path of the design vehicle would need to be fully contained within the acceleration lane so as not to impact through vehicles on the Hume Highway.
- A raised island or other approved structure would need to be constructed to provide physical separation between the acceleration lane and the through lane to ensure trucks use the acceleration lane correctly and safely. Additional width to the newly constructed acceleration lane and shoulder may be required to accommodate this structure.
- It is vital all applicable sight distance requirements are achieved for the merge.
- A concept design for the acceleration needs to be provided showing property boundaries and include typical cross sections at regular intervals prior to determination of this development.
- The pavement design would need to be to the satisfaction of RMS, consistent with the existing lanes and in accordance with Austroads Standards. It should be noted RMS would require pavement joints to be located away from wheel paths, RMS would require a uniform pavement and wearing surface that is adequately water proofed. For advice on pavement feel free to contact the Area Maintenance Manager Vince Boer on 4872 5811.
- Where required, lighting must be upgraded/provided in accordance with Australian Standard AS/NZS1158.

<u>Traffic analysis at Hume Highway and Red Hills Road</u>

While RMS considers the acceleration lane needs to be provided prior to any increase in traffic on road safety grounds alone, RMS has considered the developers traffic analysis. The timing for the acceleration lane appears to be based on the SIDRA analysis and associated delay for the left turn from Red Hills Road onto the Hume Highway (refer to Section 10.3.3 of the Chapter 10 of the EIS). The following comments are provided:

- The peak periods analysed in SIDRA are based on total traffic observed during the August 2015 traffic counts. RMS notes these do not coincide with the peak left turning

[1] While the exact proportion of Gunlake trucks is not clear, the following is noted:

- Table 2.1 of the Transport Assessment identifies Gunlake generates an average of 168 trucks per day and identifies there an average of 221 total trucks per day on the Bypass Road north of Brayton Road.
- Section 10.2.1 of the EIS identifies Gunlake has approval for an average of 25 trucks per day to use George Street. This appears to indicate the remaining 143 Gunlake trucks (on an average day) use the Bypass Road. This suggests Gunlake trucks represent around 64% of the truck movements at the junction of the Hume Highway and Red Hills Road.

movement from Red Hills Road onto the Hume Highway. For instance, the AM model considers a period with 16 left turners when the developers' traffic count observed a period with 29 left turners. The analysis should include sensitivity testing of combinations of left turning and through volumes to determine the period of peak impact (i.e. highest delay).

- Tables 10.6 and 10.9 provide details of expected delay (level of service) for the left turn movement from Red Hills Road onto the Hume Highway. The timing appears to be based on an observed level of service of F in 2025. RMS considers the appropriate level of service target to be C. RMS notes the analysis predicts the level of service fall below C (to D) for the 2015 with development scenario.
- Tables 10.6 and 10.9 provide details of expected queue lengths in metres. These queue lengths appear to reflect vehicles queued rather than a distance of queue.
- Electronic copies of the SIDRA modelling would need to be provided to verify other parameters used.

The provision of an acceleration lane prior to any increase in traffic would address RMS' concerns regarding road safety and impact to asset, thereby negating the need for any of the above traffic analysis matters being explored further.

South Marulan Interchange

RMS notes the development would increase movements at the existing South Marulan Interchange (junction of the Hume Highway, South Marulan Road and Jerrera Road. Condition 29 of the Lynwood Quarry consent (DA 128-5-2005) includes provisions which appear to relate to future developments which utilise the interchange. A copy of the full consent is attached. The Department should consider this condition.

If you have any questions please contact Chris Millet on 4221 2570.

Yours faithfully

Adam Berry
Network & Safety Manager
Network Management, Southern Region

Attachment A – Truck observations

Date: 23/09/2015
Time: 12.30pm -1.00pm
Observer: Chris Millet
Location: Hume Highway - Red Hills Road
Description: Trucks entering the Hume Highway

Hour	Minute	Comment about Truck behaviour
12	48	The truck approached the intersection and turned into the left onto the shoulder of the Hume without apparently giving any thought to northbound through traffic. You can see in the video that the white land cruiser (or the like) moves from the outside lane to the median lane to increase the separation between themselves and the truck

Date: 3/03/2016
Time: 10.00am - 12.02pm
Observer: Kendrick Westlake
Location: Hume Highway - Red Hills Road
Description: Trucks entering the Hume Highway

Hour	Minute	Comment about Truck behaviour
10	12	Slowed, looked and entered gap, did not stop
10	15	Stopped and waited for gap
10	16	Stopped and waited for gap
10	17	Pulled out on to shoulder, traffic merged across
10	19	Stopped and waited for gap, pulled out and car merged across
10	19	Pulled out behind previous truck and same car merged across
10	22	Pulled out on to shoulder, truck accelerating out of rest area had to merge across with traffic in each lane
10	34	Pulled straight out on to the shoulder with 2 lanes of traffic
10	43	Stopped and waited for gap then pulled out into travel lane
10	44	Pulled out onto shoulder to accelerate, lots of traffic in each lane
10	45	Pulled out onto shoulder to accelerate, lots of traffic in each lane
10	45	Pulled out onto shoulder to accelerate, traffic merged across
10	49	Pulled out onto the shoulder with 2 lanes of traffic and used the shoulder to accelerate
10	50	Pulled out onto the shoulder with 2 lanes of traffic and used the shoulder to accelerate
10	52	Ute with trailer used shoulder to accelerate and merge into traffic
10	56	Pulled out onto shoulder to accelerate, traffic merged across
10	58	Pulled out onto shoulder to accelerate, no traffic
11	3	Pulled out onto shoulder to accelerate, traffic merged across
11	3	Pulled out onto shoulder to accelerate, traffic merged across
11	8	Stopped and waited for passing trucks then pulled into the travel lane, no traffic
11	8	Followed previous truck, stopped and waited for passing trucks then pulled into the travel lane, no traffic
11	19	Pulled out onto shoulder to accelerate, traffic merged across
11	19	Pulled out onto shoulder to accelerate, traffic merged across
11	27	Pulled out onto shoulder to accelerate, traffic merged across
11	29	Pulled out onto shoulder to accelerate, traffic merged across
11	32	Stopped, waited then pulled out onto the shoulder to accelerate, traffic merged across
11	33	Pulled onto shoulder to accelerate, 1 car had to merge across
11	39	Pulled onto shoulder to accelerate, 1 car had to merge across
11	42	Pulled out onto shoulder to accelerate, traffic merged across
12	0	Pulled out onto shoulder to accelerate, traffic merged across
12	2	Pulled out onto shoulder to accelerate, traffic merged across

Date: 22/04/2016
Time: 10.25am - 11.02pm
Observer: Kendrick Westlake
Location: Hume Highway - Red Hills Road
Description: Trucks entering the Hume Highway

Hour	Minute	Comment about Truck behaviour
10	12	Truck slowed, looked and entered gap, did not stop
10	12	Slowed, looked and entered gap, did not stop
10	40	Truck slowed and waited for traffic, then pulled onto shoulder to accelerate, traffic merged across
10	42	Truck pulled straight into shoulder to accelerate, traffic merged across
10	48	Truck pulled straight onto shoulder to accelerate
10	52	Truck pulled into travel lane to accelerate, some traffic had to merge across
10	55	Truck pulled into travel lane, no traffic
10	56	Truck pulled onto shoulder to accelerate
10	57	Truck pulled onto shoulder to accelerate, traffic merged across
10	59	Truck pulled onto shoulder to accelerate, traffic merged across
11	0	Truck pulled onto shoulder to accelerate, traffic merged across
11	1	Truck pulled onto shoulder to accelerate, traffic merged across
11	2	Truck pulled onto shoulder to accelerate, traffic merged across

Date: 27/04/2016
Time: 9.48am - 10.48pm
Observer: Kendrick Westlake
Location: Hume Highway - Red Hills Road
Description: Trucks entering the Hume Highway

Hour	Minute	Comment about Truck behaviour
9	50	Truck pulled onto shoulder to accelerate, traffic merged across
9	51	Truck pulled into travel lane to accelerate, no traffic (no video, missed it)
9	53	Truck pulled onto shoulder to accelerate, traffic merged across
9	58	Truck pulled into travel lane to accelerate, no traffic
10	19	Truck pulled onto shoulder to accelerate, traffic merged across
10	28	Truck pulled onto shoulder to accelerate, traffic merged across
10	33	Truck waited a while for gap in traffic then pulled into travel lane to accelerate. Some traffic merged across
10	37	Truck pulled straight onto shoulder to accelerate. Not sure about traffic merging