

Appendix 8

Hume Highway Intersection with Paynes Road, Bookham NSW

(Transport & Urban Planning)

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ABN 51 164 127 422
ACN 164 127 422

TRANSPORT & URBAN PLANNING PTY LTD

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

SYDNEY OFFICE:

5/90 TORONTO PDE
SUTHERLAND NSW

P.O. Box 533

SUTHERLAND NSW 1499

PHONE: (02) 9545 1411

FAX: (02) 9545 1556

E-MAIL: admin@transurbanplan.com.au
www.transurbanplan.com.au

11 September 2015

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 Pty Ltd to inspect the above intersection and provide advice regarding the intersection's configuration regarding current RMS standards. The RMS in recent times have adopted Austroad Standards / Guidelines together with their own complimentary (RMS) supplements, as the road standards for major roads in NSW.

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 (now RMS). More recently, the Quarry supplied materials to the RMS for some of its major works which I understand was examined as part of the 1995 EIS for the quarry.

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 then 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.

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 provided:





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- 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 position than cars would provide drivers with 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. It should be noted that acceleration and deceleration lane distances used in the standards generally apply to cars. However these distances are also applicable for intersections that have low volumes of heavy vehicles, such as Paynes Road.

- The length of the right turn lane (200 metres long) in the Highway complies to Austroads / RMS 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 Austroads / RMS 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 Austroads / RMS 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, either for cars or trucks.
- Based on the traffic volumes observed at the site inspection and an examination of the hourly 2015 volumes at the Hume Highway's permanent counting stations HHW006 (near Manton) and GNDSTC (north of Gundagai), 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. Maximum southbound volumes in Hume Highway during



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quarry operating hours are in the order of 300-400vph and are spread over 2 lanes, which provides large regular gaps in the southbound highway traffic.

- 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. Trucks after they turn right move quickly into the kerbside lane in the Hume Highway. Maximum northbound hourly volumes in the highway number between 282-375vph and this level of traffic also provide regular long gaps which allows the trucks to quickly move into the kerbside lane.
- 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 current proposal is approved. The proposal will increase the number of trucks using the intersection to a maximum of 8 loads per hour (i.e. 16 truck movements with return trips). These traffic movements would be generated from both the quarry and asphalt plant or concrete plant. The additional movements on these busy days 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.

Conclusion

The current intersection configuration was designed by the then RTA to meet the existing and future traffic requirements of the intersection. The quarry proposal will increase the overall 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
Transport and Urban Planning Pty Ltd



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