

TUNBRIDGE TIER ROAD QUARRY

TRAFFIC IMPACT ASSESSMENT

FOR

HAZELL BROS GROUP PTY LTD

Submitted by:

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1. Introduction

This traffic assessment is provided to assess likely impacts of a proposed extension of quarry activities at the existing Tunbridge Tier Quarry operated by Hazell Bros.

This report is to assess transport related activities for compliance with Section E4.0 Road and Railway Assets Code of the Northern Midlands Interim Planning Scheme.

The report has been prepared from information provided by Hazell Bros Group P/L and from a general appreciation of the locality.

2. The Site

The site is located indicatively four (3.82km) kilometres west of the Midland Highway on Tunbridge Tier Road.

The Site, Tunbridge Tier Road Google Map



Access to the quarry is by an existing gravel driveway some 4 metres wide at the property boundary with throat width some 24 metres at the edge of seal. The driveway is generally at right angles to the road on an approach gradient of some 4%. A gravel turn in area is available on the opposite side of the road to provide for truck turns.

Sight distance at the driveway is:

- To east - some 180 metres
- To west - some 200 metres to the nearest road curve but with some 1 km available across roadside properties.

The present quarry licence is for the annual extraction of 5,000 m³, with this volume reduced from a previous 20,000m³ limit some 20 years ago due to the lack of demand for the product material.

Existing cartage from the quarry uses combination vehicles with a payload of some 32 tonnes.

Access and Egress off of Tunbridge Tier Road to the Quarry site



Pull-off Bay looking east, adjacent to the Quarry Entrance



Exiting the Quarry looking east with a clear view of 180 meters



Exiting the Quarry looking West with a clear view exceeding one thousand meters



Accident Data

The traffic crash listing (last 5 years) for the road network in close proximity to the site indicates no traffic or property damage accidents, generally distributed over the access / egress road network, suggesting a “safe” road system in proximity to the Quarry site.

3. The Proposal

The proposal is to increase the quarry material extraction licence from the present 5,000 m³ per annum to 70,000 m³ per annum to provide pavement materials for proposed Midland Highway upgrade works.

4. Road Facilities

Tunbridge Tier Road

This road is considered as a local rural road serving mainly agricultural and forestry land uses but with some recreational traffic to Lake Sorell and Lake Crescent where the road junctions with Interlaken Road which connects to Highland Lakes Road at Steppes.

The road use suggests a classification as equivalent to a Category 5 road in the planning scheme.

In the vicinity of the quarry the road is constructed with a sealed surface some 5.0 metres wide with 1.0 metre gravel shoulders, with a side drain in grassed verges at the site frontage.

The road alignment for the main cartage route from the quarry to Midland Highway is a series of straights and curves, with a relatively flat profile.

Hazell Bros hold a NHVR permit to operate vehicles up to 57.5 tonne vehicle mass on the road.

The road standard suggests a travel speed in the vicinity of the site of some 80 to 85 km/h.

Midland Highway Junction

The Midland Highway junction is developed to a high standard with entry turns from the highway via auxiliary turning lanes.

5. Traffic Data

Tunbridge Tier Road

Indicative ADT traffic volume less than 150 vehicles per day with minimum growth expected.

Quarry

The present quarry activity (5,000m³) indicates some 250 truck loads per annum. Allowing for the economics of the quarry activity indicates the likelihood of material delivery as a batched operation indicative 30 loads per day ie some 10 days cartage per annum with some 60 two-way truck movements per day.

Extending the quarry to 70,000 m³ increases the cartage task to some 112,000 tonnes.

The management plan is to operate a fleet of six trucks with a conservative turnaround of 1.5 hours allowing for loading / unloading indicates daily cartage up to some 40 loads, i.e. some 1,200 tonnes suggesting cartage at this rate will be over some 100 days with daily two-way truck traffic at some 80 vehicles.

Indicative other traffic associated with the site use is estimated at up to 20 two way movements daily

6. Assessment

Assessment in accord with Section E4.0 of the Interim Planning Scheme:

E4.6.1 P3(C) The existing driveway with entry / exit of large cartage vehicles is by use of an existing widened shoulder as a "G" turn on the opposite side of the sealed pavement from the gateway. The travel path avoids the tight turn from the sealed roadway and minimises pavement damage.

Upgrading the driveway for outward movements to comply with fig. 6.61 of Austroads is suggested to provide an exit turn path with minimum impact on the existing sealed surface by offsetting the gateway 20 metres from edge of seal and providing for approach / departure tapers.

Installation of advisory warning signs W5-22 "Truck" with attachment "Turning" plate on the approaches to the driveway some 140 metres distant is considered prudent.

Approach sight distance at the driveway, minimum value of 180 metres is just less than required for an 85 km/h approach speed but in excess of truck stopping sight distance for a 90 km/h approach speed with desirable 2.5 second reaction time and in excess of ASD (approach sight distance) for a 100 km/h approaching car.

Assessment of traffic efficiency suggests minimal impact with a traffic volume estimated at up to 180 vehicles per day with an estimated level of service "C" capacity of some 375 vehicles. Note, the minimum

increase in traffic is due to increasing the daily cartage rate above the present permitted quarry supply but with cartage extending from 10 days to 100 days.

Upgrading the driveway as suggested is considered appropriate to maintain an adequate level of safety and efficiency for Tunbridge Tier Road – deemed to comply.

- E4.7.1 A1 Not applicable as quarry more than 50 metres from a Category 1 road.
- E4.7.2 A2 The proposal is to use an existing access but with upgrading to protect the through road - deemed to comply
- E4.7.3 Not applicable
- E4.7.4 Refer to section E4.6.1 P3(c) above - deemed to comply

7. Conclusions

A traffic assessment for the proposed increase in material supply from an existing quarry on Tunbridge Tier Road indicates compliance with section E4.0 of the Northern Midlands Interim Planning Scheme provided upgrade of the driveway and installation of advisory signage as outlined in this report are given consideration.

Terry Eaton