10 April 2018

SF2017/117114; WST08/00023/13

The Manager
Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Jack Murphy

Dear Mr Murphy

SSD6084_ MOD 1: Austen Quarry Extension Project

Thank you for your email on 14 March 2018 referring SSD6084 Mod 1 to Roads and Maritime Services for comment.

The documentation submitted in support of the Austen Quarry Extension Project has been reviewed. Roads and Maritime notes the proposed modification involves:

- An increase in the annual production limit (from 1.1 mtpa to 1.6 mtpa).
- Increase of the average daily truck dispatch limit (from 150 to 200).
- Increase the maximum daily truck dispatch limit (from 250 to 300).
- Apply a new speed zone of 40km/h over Glenroy Bridge on Jenolan Caves Road.
- Increase the existing approved operational staffing numbers at the quarry from 45 to 60.

Modification 1 has been referred to Roads and Maritime in accordance with section 16(3) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*.

Pursuant to section 16(3) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*, Roads and Maritime provides the following recommendations for the Department's consideration:

- Prior to the commencement of Modification 1, a Channelised Right turn lane Short [CHR(s)] in accordance with Figure A29 Part 4 *Austroads Guide to Road Design 2017* (copy enclosed) and relevant Roads and Maritime supplements, is to be provided in Jenolan Caves Road at its intersection with the site access. The intersection works are to be designed and constructed for an 80km/h speed zone and be able to accommodate the largest vehicle accessing the intersection.

- Safe Intersection Sight Distance in accordance with Part 4A of *Austroads Guide to Road Design* is to be provided and maintained at the vehicular access intersection with Jenolan Caves Road.

- A formal agreement in the form of a Works Authorisation Deed (WAD) will be required between the developer and Roads and Maritime for the developer to undertake "private financing and construction" of any works on Jenolan Caves Road. This agreement is necessary for works in which Roads and Maritime has a statutory interest. A WAD is to be executed prior to the commencement of construction works.
- Prior to the commencement of construction works, the proponent is to contact Roads and Maritime's Field Traffic Manager to determine if a Road Occupancy Licence (ROL) is required. In the event that an ROL is required, the proponent is to obtain the ROL prior to works commencing within three (3) metres of the travel lanes on Jenolan Caves Road.
- Haulage operations and shift changeover times coinciding with local student school bus pick up/drop off times are to be avoided.
- In accordance with clause 16(1) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*, the applicant is to prepare and implement a driver code of conduct for the task of transporting materials on public roads.
- A driver code of conduct and management plan is to be developed to manage the risks associated with staff commuting by road to and from the site. The management plan is to specifically address the risks of driver fatigue and poor driver behaviour and include strategies to mitigate those risks to promote safe driver commuting practices.

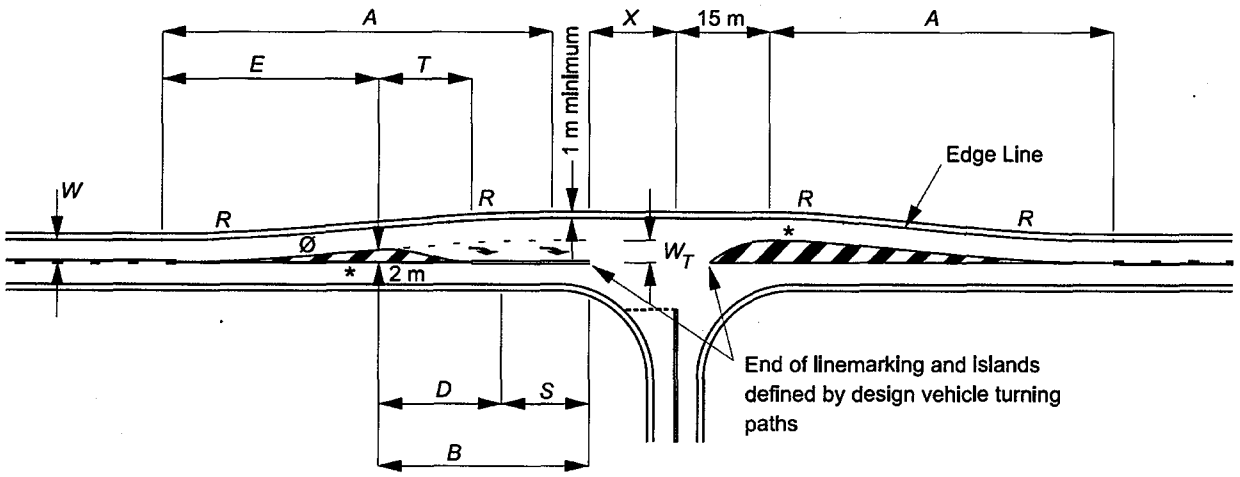
Please not that Roads and Maritime does not support the proposal to change the speed zone on Jenolan Caves Road to 40km/h on approach to and over Glenroy Bridge.

Please forward a copy of the Department's determination of the modification application to Roads and Maritime at the same time it is sent to the applicant. Should you require further information please contact the undersigned on 02 6861 1453.

Yours faithfully

Andrew McIntyre
Manager Land Use Assessment
Western Region

Figure A 29: Channelised right-turn treatment with a short turn slot [CHR(S)] two-lane rural road



Notes:

Ø - double barrier line not to be used this side of the island.

** - Islands are to comprise linemarking only, i.e. no raised or depressed medians. Diagonal rows of RRPMs within the painted islands should be used to improve the delineation of diagonal pavement marking.*

The dimensions of the treatment are defined below and values of A, D, R and T are shown in Table A 4:

W = Nominal through lane width (m) (including widening for curves). For a new intersection on an existing road, the width is to be in accordance with the current link strategy

W_T = Nominal width of turn lane (m), including widening for curves based on the design turning vehicle = 3.0 m minimum

A = Length of lateral movement (Table A 4)

B = Total length of auxiliary lane including taper, diverge/deceleration and storage (m)

E = Distance from start of taper to 2.0 m width (m) and is given by:

$$E = 2\left(\frac{A}{W_T}\right)$$

T = Taper length (m) and is given by:

$$T = \frac{0.33VW_T}{3.6}$$

S = Storage length to cater for one design turning vehicle (m)

V = Design speed of major road approach (km/h)

X = Distance based on design vehicle turning path, typically 10–15 m

Source: Department of Main Roads (2006)[26].

Table A 4: Dimensions of CHR(S) treatment for various design speeds

Design speed of major road approach (km/h)	Lateral movement length A (m)[1]	Diverge deceleration length D (m)[2]	Desirable radius R (m)	Taper length T (m)[3]
50	40[4]	15	110	15
60	50[4]	25	175	15
70	60	35	240	20
80	65	45	280	20
90	75	55	350	25
100	85	70	425	30
110	95	85	500	30
120	100	100	600	35

1 *Based on a diverge rate of 1 m/sec and a turn lane width of 3.0 m. Increase lateral movement length if the turn lane width >3 m. If the through road is on a tight horizontal curve (e.g. one with a side friction demand greater than the maximum desirable), the lateral movement length should be increased so that a minimal decrease in speed is required for the through movement.*

2 *Based on a 20% reduction in through road speed at the start of the taper to a stopped condition using a value of deceleration of 3.5 m/s^2 (Table 5.2 of AGRD Part 4A (Austroads 2017a)). Adjust for grade using the 'correction to grade' factor in Table 5.3 of AGRD Part 4A.*

3 *Based on a turn lane width of 3.0 m.*

4 *Where Type 2 road trains are required, minimum A = 60 m.*