

Tasman Extension Project Environmental Impact Statement

ATTACHMENT 8

ADDITIONAL ROAD TRANSPORT ASSESSMENT INFORMATION

Our Ref: 12S1265000

23 April 2012

Donaldson Coal Pty Ltd
PO Box 2275
GREENHILLS NSW 2323

Attention: Mr Tony Sutherland

Dear Tony,

RE: TASMAN EXTENSION PROJECT ADDENDUM

Introduction

GTA Consultants was commissioned in April 2012 to assess the road transport implications of an option to amend the haulage route used for the transport of waste rock associated with the Tasman Extension Project (the Project) in 2013. The original assessment was undertaken by Halcrow on behalf of Donaldson Coal Pty Ltd, and the results presented in *Tasman Coal Project Road Transport Assessment*, March 2012. This addendum should be read in conjunction with that original assessment report.

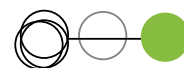
Project Amendment

The option under consideration relates to the haulage of waste rock material from the Project's new pit top during 2013. The original assessment was based on the assumption that over a period of approximately one year, a proportion of the waste rock material produced by the excavation of the box cut, general site earthworks and development of the underground drift would be trucked off-site for disposal at the Donaldson Open Cut, using the same haulage contractor, trucks and haulage route as for the transport of ROM coal.

This assessment reviews the road transport implications of an option to truck the waste material to the Daracon Quarry, rather than the Donaldson Open Cut. The loaded waste rock haulage trucks would travel from the new pit top access road, across George Booth Drive at the new roundabout, to the Daracon Quarry access road. Empty trucks would return along the same route.

Coal haulage of up to 118 heavy vehicle trips per day would continue from the existing pit top.

Combined with the coal haulage trucks, a maximum of 12 truck departures per hour was previously assessed, with half being associated with coal haulage from the existing pit top, and half being by waste rock haulage trucks from the new pit top. For the purpose of this assessment, it is assumed that the maximum number of departures made by coal haulage trucks would remain at six departures per hour, while the number of departures by waste rock trucks would increase to a maximum of 40 departures per hour. The truck departures are assumed to be matched by the return of empty trucks during the same hour.



Average Weekday Daily Traffic Volumes

The amended waste rock haulage route would reduce traffic generated by the Project by 118 heavy vehicles per day on George Booth Drive between the Daracon Quarry access road and John Renshaw Drive, and on John Renshaw Drive between George Booth Drive and the Donaldson access road.

Table 1 summarises the impacts of the amendment on the average weekday traffic volumes on the surrounding roads, and compares these against the volumes under the original assessment.

Table 1: Average Weekday Daily Project and Total Traffic Volumes in 2013 (vehicles/day)

Road and Location	Waste Rock to Donaldson		Waste Rock to Daracon	
	Project Traffic	Total Traffic	Project Traffic	Total Traffic
George Booth Drive				
North of New Access	340	10,265	222	10,147
John Renshaw Drive				
West of Donaldson Access	265	11,632	147	11,514

The amendment would reduce the Project's contribution to traffic on the public roads. With the proposed amendment, the Project would contribute 2.2% of the total average weekday traffic, and 14.2% of the total heavy vehicles on George Booth Drive north of the Daracon Quarry roundabout. Under the original proposal, the Project would contribute 3.3% of total traffic and 16.3% of heavy vehicles (Halcrow, 2012).

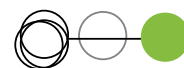
Average Weekday Peak Hour Traffic Volumes

The alteration to the waste rock haulage would also impact on the number of trucks generated by the Project on the surrounding roads during the on-street peak hours. Table 2 compares the peak hour traffic volumes on the surrounding roads with the original haulage route to the Donaldson Open Cut and with the altered haulage route to the Daracon Quarry. This assumes the maximum number of coal and waste rock truck departures occur during the on-street peak hours, and are matched by the return of empty vehicles along the same route.

Table 2: Average Weekday Peak Hour Project Traffic Volumes in 2013 (vehicles/day)

Road and Location	Waste Rock to Donaldson		Waste Rock to Daracon	
	AM Peak	PM Peak	AM Peak	PM Peak
Tasman Mine Access				
Existing	45	35	45	35
New	26	18	94	86
George Booth Drive				
North of New Access	36	32	24	20
John Renshaw Drive				
West of Donaldson Access	27	26	15	14

Table 2 demonstrates that even with an increase in the maximum number of waste rock truck departures above that of the original assessment, the peak hour volumes generated by the Project on the public roads would be reduced below the volumes under the previous assessment. Traffic increases would be limited to the new Tasman access road and the Daracon Quarry access road, and the roundabout on George Booth Drive.



Midblock Levels of Service

Table 3 presents a comparison between the estimated Levels of Service on the haulage route with waste rock haulage to Donaldson as in the original assessment, and to Daracon Quarry, as now being reviewed.

Table 3: Peak Hour Levels of Service on Haulage Roads in 2013

Option and Location	6.00-7.00am *		4.00-5.00pm	
	Volume/Capacity	Level of Service	Volume/Capacity	Level of Service
Waste Rock to Donaldson				
George Booth Drive	0.39	D	0.41	D
John Renshaw Drive	0.33	C	0.36	C
Waste Rock to Daracon				
George Booth Drive	0.37	C/D	0.39	D
John Renshaw Drive	0.32	C	0.35	C

* Coal and waste rock haulage would not occur prior to 7.00am, however for the purpose of this assessment, is conservatively included in the on-street peak hour

Table 3 indicates that the amended haulage route for waste rock would result in small improvements in the volume/capacity ratio on the public roads. These improvements would have negligible impact on the resulting Levels of Service, however the operational conditions within the traffic stream as perceived by drivers and/or passengers would be slightly better than with the original haulage route.

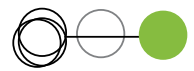
Operation of Intersections

The original assessment by Halcrow presented the results of analyses of the operating characteristics of key intersections using the SIDRA INTERSECTION analysis programme. That analysis found that in 2013, with maximum haulage of waste rock and coal during peak hours, the intersection of John Renshaw Drive with the Donaldson access road would operate at satisfactory Levels of Service during the morning and evening peak hours.

The option to alter the waste rock haulage route would reduce the number of trucks turning left from John Renshaw Drive into the Donaldson access road, and turning right from the Donaldson access road into John Renshaw Drive. The latter is the critical movement at this intersection, with the right turn movement experiencing the longest delays. The reduction in heavy vehicles on this movement from that of the original assessment would clearly result in a reduction in delays experienced at that intersection, and no further analysis of its operating conditions is required.

Similarly, the Halcrow assessment found that the roundabout at the intersection of John Renshaw Drive with George Booth Drive currently operates at a satisfactory Level of Service, and would have ample spare capacity during peak hours, following its conversion to a four way roundabout as part of the Hunter Expressway road works. The option to alter the waste rock haulage route would reduce the number of heavy vehicles turning right from George Booth Drive into John Renshaw Drive (east) and turning left from John Renshaw Drive (east) into George Booth Drive. The reduction in heavy vehicles would clearly result in an increase in the spare capacity available at the roundabout, and a reduction in overall vehicle delays.

The option to alter the waste rock haulage route would result in a redistribution of traffic at the proposed roundabout at the intersection of George Booth Drive with the Daracon Quarry access road



and the new Project access road. The impact of this redistribution and the increase in waste rock truck movements has therefore been assessed using SIDRA Intersection to quantify the implications of the amendment to waste rock haulage on the intersection operating characteristics.

Table 4: George Booth Drive-New Project Access Intersection Operating Conditions 2013

	Waste Rock to Donaldson			Waste Rock to Daracon		
	X-value	AD	LOS	X-value	AD	LOS
AM Peak	0.44	21.5	B	0.50	23.0	B
PM Peak	0.52	17.9	B	0.61	26.9	B

The proposed roundabout would therefore operate at good Levels of Service during the peak hours with the amended waste rock haulage route and higher level of peak hour waste rock haulage through the roundabout. The average delay experienced by the worst movement would increase, however it is noted that these delays would occur to only a small number of vehicles, typically the right turn movements in or out of the side roads. Delays to through traffic on George Booth Drive would remain low.

Conclusions

The option to transport waste rock material from the new Project access road to the Daracon Quarry would have positive implications for the operation of the surrounding public roads compared with the original proposal to transport the material to the Donaldson Open Cut. The amendment would result in a reduction of in the number of heavy vehicle trips per day on George Booth Drive and John Renshaw Drive between the Project and Donaldson in 2013. Midblock Levels of Service on this route would be marginally improved, and delays at the intersections of John Renshaw Drive with George Booth Drive and the Donaldson Access Road would be reduced. The proposed roundabout at the intersection of George Booth Drive, the New Project access road and the Daracon Quarry access road would operate at good Levels of Service during peak periods with the increased waste rock haulage rate.

I trust the above clearly sets out our assessment. Naturally, should you have any questions or require any further information, please do not hesitate to contact me on (02) 8448 1800.

Yours sincerely

GTA CONSULTANTS

Penny Dalton
Associate



11 May 2012

CR2012/002938 & CR2012/002053
SF2012/008854/1 (252.5395/01/04-4)
MD

Mr Tony Sutherland
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GEORGE BOOTH DRIVE (MR527): TASMAN MINE EXTENSION PROJECT – TRAFFIC ASSESSMENT AND ROUNDABOUT DESIGN (SSD-4692)

Dear Mr Sutherland,

I refer to your letter dated 30 March 2012 and subsequent email with attachments dated 10 April 2012 requesting comment from Roads and Maritime Services (RMS) on the Traffic Assessment and design of the roundabout proposed for the subject development.

RMS has reviewed the Traffic Assessment provided and accepts the data and methodology used in the report.

Regarding the design of the roundabout at the intersection of George Booth Drive (MR527) and the Daracon Access Road, RMS can provide the following preliminary comments:

- Plans need to have an RMS plan registration number for concept design.
- The roundabout should be designed in accordance with the *Austroads Guide to Road Design - Part 4B* (with RMS supplements).
- The size of the proposed roundabout appears a little excessive for the design vehicle, a 26 metre B-Double, unless the design vehicle is larger than this size.
- Future submissions should include a design report providing information on design philosophies and design standards used. At this stage there are too many unknown elements for a more comprehensive review. Future plans submitted without a design report will generally not be considered.
- The reverse curve on the approach shown on Sheet SK004 is supported, incorporating the approach and entry curves to the roundabout reducing speed on entry. However, the exit

Roads & Maritime Services

curves should be tangential or larger on George Booth Drive to facilitate acceleration through the exit.

- OH&S in the design report was not provided but is necessary for concept design.
- All works associated with the proposed development shall be at no cost to RMS.

Please note that this is preliminary advice only and may change with further design assessment during the Works Authorisation Deed process.

RMS will provide further comments and advice at the development application stage for the subject development, on referral from the consent authority.

Should you require further advice please contact me on (02) 4924 0420.

Yours sincerely



Dave Young
Manager, Land Use Development
Development North
Hunter Region