
Project:	Lake Vermont Meadowbrook Project	Office:	Brisbane, Merivale St
Project No:	300305245	Status:	Final
Client:	AARC Environmental Solutions Pty Ltd	Prepared by:	A.Tierney
Date:	1 February 2024	Approved by:	P.Robertson (RPEQ#26198)
Subject:	Lake Vermont Meadowbrook Project – Response to TMR Requirements		

Background

Bowen Basin Coal Pty Ltd (the Proponent), on behalf of the Lake Vermont Joint Venture, lodged an Environmental Impact Statement (EIS) with the Queensland Government Department of Environment and Science (herein referred to as 'DES') in March 2023 for the proposed extension to the Lake Vermont Mine onto the 'Meadowbrook East' property, described as the 'Lake Vermont Meadowbrook Project' (herein referred to as 'the Project'). Following the public notification period, an updated EIS was submitted to DES in October 2023.

The Queensland Government Department of Transport and Main Roads (herein referred to as 'TMR') reviewed the EIS and provided a number of recommendations to DES, including a request for additional information relating to the road safety risk at rail levels crossings affected by the Project's construction traffic. DES has reviewed TMR's request and issued these recommendations to the Proponent via email.

Stantec has been engaged in November 2023 by AARC Environmental Solutions to prepare this transport technical note to review the road safety risk at rail levels crossings which are located along the Project haul roads.

TMR Recommendations

This section of the technical note has been prepared to reproduce the recommendations which are to be addressed by this technical note. For reference, the recommendations have been reproduced in italics.

Rail Level Crossing

"1. The EIS be updated to include the following additional proponent commitment in the Transport Section of Table 22.1 Summary of Proponents Commitments Bowen Basin Coal will provide a RPEQ certification to TMR to demonstrate that the development's construction traffic will not worsen the safety risk at any level crossing affected by the project's construction traffic.

TMR recommends: The EIS be updated to include the following additional proponent commitment in the Transport Section of Table 22.1 Summary of Proponents Commitments Bowen Basin Coal will provide a RPEQ certification to TMR to demonstrate that the development's construction traffic will not worsen the safety risk at any level crossing affected by the project's construction traffic."

Project Vehicle Demands

1.1 Workforce Vehicle Demands

Based on the traffic assessment undertaken as part of the submitted EIS (prepared by GTA now Stantec, dated 18 March 2022), the following workforce vehicle demands are forecast between the Project site and Dysart:

- Year -1 & Year 0 (Construction) – 109 vehicles per peak hour (approx. 218 vehicles per day)
- Year 1 onwards (UG Development and Operations) – 37 vehicles per peak hour (approx. 74 vehicles per day)

1.2 Heavy Vehicle Demands

Based on the traffic assessment undertaken as part of the existing submission (prepared by GTA now Stantec, dated 18 March 2022), the heavy vehicle demands forecast to be generated by the Project are summarised in Table 1.

Table 1 – Project Heavy Vehicle Traffic Summary

Description	Destination	Project Year				
		Year -1 (2024)	Year 0 (2025)	Year 1 (2026)	Year 2 (2027)	Year 3 (2028)
Concrete Deliveries	Mackay	868 veh.	1,011 veh.	510 veh.	52 veh.	52 veh.
Other Vehicles	Mackay	229 veh.	104 veh.	314 veh.	499 veh.	340 veh.
Quarry Deliveries	Tay Glenn Quarry (Private Road)	3,536 veh.	3,536 veh.	52 veh.	52 veh.	52 veh.

Project heavy vehicle traffic was assumed to occur between the Project site and Mackay. These vehicles were assumed to be distributed 70% west via Saraji Road / Peak Downs Mine Road and 30% east via Golden Mile Road / Fitzroy Developmental Road.

Change to Previous Assessment

Following the EIS submission and recent consultation with Isaac Regional Council, the Proponent proposes to source concrete locally (as opposed to bringing this from Mackay). It is understood that a concrete batch plant may also be constructed on-site to improve the ability to manage Project concrete demands.

As part of the previous assessment, the following traffic volumes were associated with concrete deliveries between the Project site and Mackay:

- Year -1 (2024) – Construction – 868 deliveries per year (approximately 2 – 3 vehicles per day)
- Year 0 (2025) – Construction – 1011 deliveries per year (approximately 2 – 3 vehicles per day)
- Year 1 (2026) – UG Development – 510 deliveries per year (approximately 1 – 2 vehicles per day)
- Year 2 (2027) – UG Development – 52 deliveries per year (less than 1 vehicle per day)
- Year 3 onwards (2028+) – Operations – 52 deliveries per year (less than 1 vehicle per day)

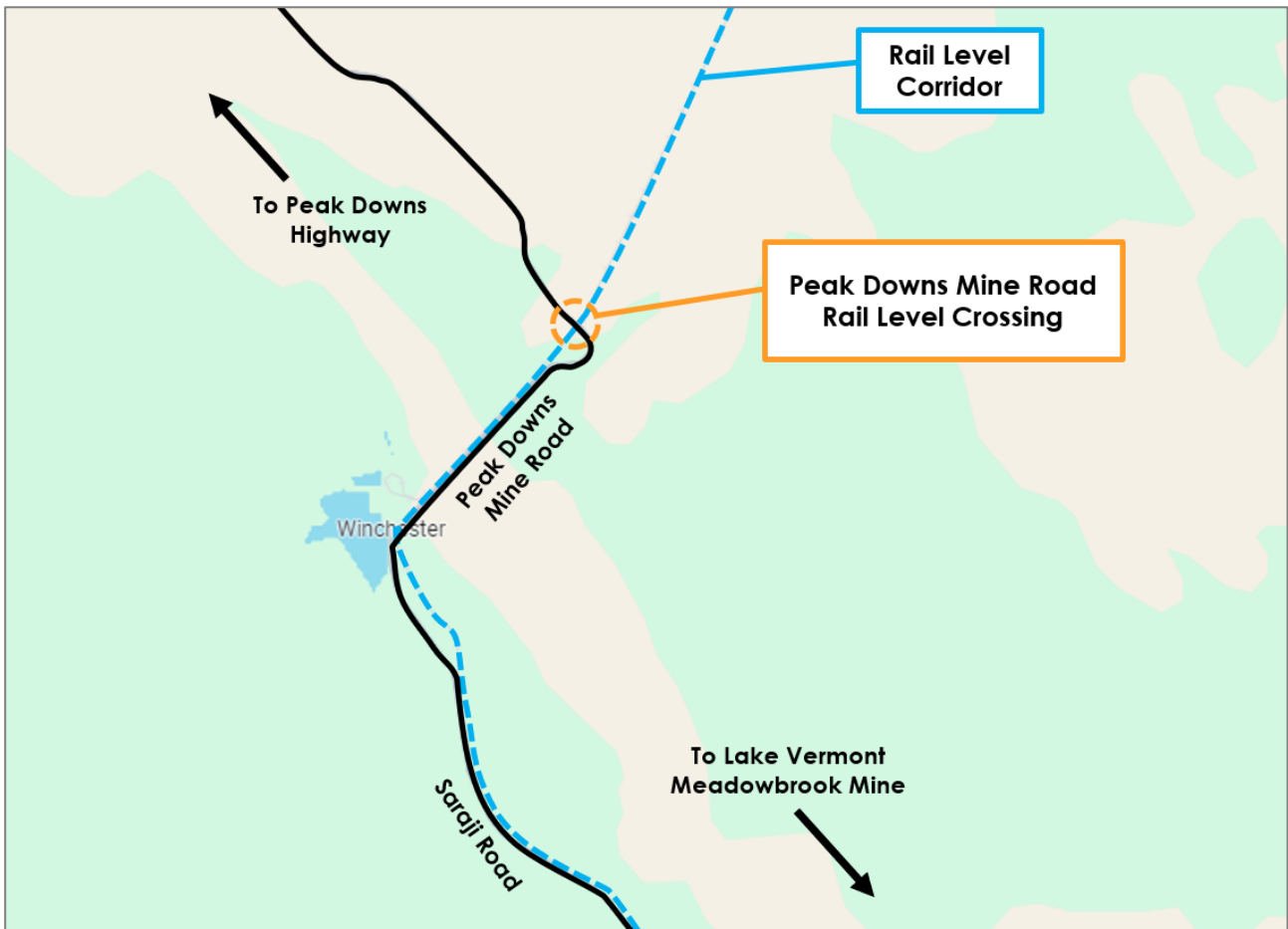
The source of the concrete is yet to be confirmed, however could be expected to be sourced from Moranbah. As such, it has been assumed that these vehicle demands will still be present within the local road network between the Project site and Moranbah.

It is noted that with this change, there would no longer be a 70% west / 30% east split for concrete movements, with 100% of concrete delivery vehicles being distributed to the west towards Moranbah.

Impacted Rail Level Crossings

A review of the road network expected to be utilised by Project-related vehicles has been undertaken to identify any rail level crossings which have the potential to experience an increase in vehicle demands. The results of the review identified only the Peak Downs Mine Road rail level crossing (approximately 18.9km from the Peak Downs Highway) being expected to accommodate any Project related vehicle demands. The location of the Peak Downs Mine Road rail level crossing is shown in Figure 1.

Figure 1 – Location of Peak Downs Mine Road Rail Level Crossing



Peak Downs Mine Road Vehicle Demands

Background traffic volumes for the Isaac Regional Council controlled Peak Downs Mine Road have been sourced from traffic surveys undertaken in September 2023. A summary of the peak hour and daily traffic data for Peak Downs Mine Road is provided in Table 2.

Table 2 – Peak Downs Mine Road Traffic Survey Summary

Direction	AM Peak Hour	PM Peak Hour	Daily Volume
Southbound	216 vehicles per hour	55 vehicles per hour	1,450 vehicles per day
Northbound	36 vehicles per hour	261 vehicles per hour	1,750 vehicles per day
Total	252 vehicles per hour	316 vehicles per hour	3,200 vehicles per day

The data provided in Table 2 indicates that Peak Downs Mine Road is expected to maintain an existing two-way daily vehicle demand in the order of 3,200 vehicles per day, and approximately 320 vehicles per hour. Consistent with the approach outlined in the GTIA, a background traffic growth rate of 3% per annum (linear) has been adopted to inform the basis of future traffic forecasts. The application of this growth rate is generally considered appropriate for locations where site-specific data is unavailable.

Increased Vehicle Demands

Based on the Project’s forecast vehicle demands, the Peak Downs Mine Road rail level crossing is expected to experience additional vehicle demand resulting from the movements of heavy vehicles. These increased vehicle movements have been overlaid on forecast background traffic demands. A summary of the expected percentage increase to vehicle demands at the Peak Downs Mine Road rail level crossing is provided in Table 3.

Table 3 – Peak Downs Mine Road Traffic Summary (Daily)

Project Year	Project Traffic (veh. / day)	Daily Background Traffic (veh. / day)	Percentage Change
Year -1 (2024)	3 veh. / day	3,296 veh. / day	< 0.1%
Year 0 (2025)	3 veh. / day	3,392 veh. / day	< 0.1%
Year 1 (2026)	2 veh. / day	3,488 veh. / day	< 0.1%
Year 2 (2027)	1 veh. / day	3,584 veh. / day	< 0.1%
Year 3 (2028)	1 veh. / day	3,680 veh. / day	< 0.1%

The results of the review indicate that the Peak Downs Mine Road rail level crossing could be expected to result in an increase to vehicle demands of up to 3 vehicles per day on average, which results in an increase of less than 0.1% on forecast average daily vehicle demands.

It is not expected that the additional 3 vehicles per day will have any significant impact on the operations or road safety risks of the Peak Downs Mine Road rail level crossing.

Conclusion

Having regard for the existing Traffic Impact Assessment (prepared by GTA now Stantec, dated 18 March 2022), request from TMR, and the results of the review of the Peak Downs Mine Road rail level crossing provided within this technical note, we see no reason why EIS approval could not be granted with regard to the operations or road safety risk of impacted rail level crossings.

Naturally, should you have any questions or require any further information, please do not hesitate to contact me or Andrew Tierney at (07) 3113 5020.

Sincerely,

Stantec Australia Pty Ltd.



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