



Our Ref: 19227

1 June 2022

Whitehaven WS Pty Ltd Level 22, 12 Creek Street BRISBANE QLD 4000

Attention: Brendan Dillon

Dear Brendan,

RE: WINCHESTER SOUTH PROJECT
RESPONSE TO SUBMISSIONS FROM DEPARTMENT OF TRANSPORT AND MAIN ROADS AND
ISAAC REGIONAL COUNCIL

As requested, The Transport Planning Partnership (TTPP) has reviewed the submissions received from Department of Transport and Main Roads (DTMR) and Isaac Regional Council (IRC) regarding the draft Environmental Impact Statement (EIS) for the Winchester South project and the accompanying Road Transport Assessment (TTPP, 2021). In consultation with Whitehaven WS Pty Ltd (Whitehaven WS), TTPP has prepared this initial response to relevant issues.

## **Intersections**

The IRC requested the following:

The proponent is requested to undertake geometric assessment of the as-constructed intersections and a swept path assessment based on maximum foreseeable design vehicle.

Whitehaven WS has advised that the largest vehicle type expected to access the Project is a B-double, which would be used for deliveries between the Project and Mackay. The as-constructed intersections at which the Project design vehicle would perform a turning movement are therefore:

 Peak Downs Mine Road and Eagle Downs Mine Road, which would be used by Project-generated construction traffic during construction of the intersection of the new Mine Access Road and Eagle Downs Mine Road, and by all Project-generated traffic once that intersection is commissioned;



- Peak Downs Mine Road and the former Dysart Road, which would be used by Project-generated construction traffic during the first 6 months of the Project; and
- Peak Downs Highway and Peak Downs Mine Road, which would be used by Project-generated traffic throughout the life of the Project.

The swept path of B-doubles has been assessed for each the relevant movements at the above as-constructed intersections. Figures 1 to 3 attached present the swept paths of B-doubles travelling between the Project and Mackay. These paths demonstrate that the existing road space is sufficient for B-double access, allowing for simultaneous inbound and outbound movements by B-doubles at each intersection.

Vehicle queues at intersections inform storage requirements on the approach lanes, including deceleration lanes. As noted in Austroads *Guide to Road Design Part 4A Unsignalised and Signalised Intersections* (2021), storage lengths can be determined by simulating the operation of the intersection using computer programs. With regard to queuing at intersections, the SIDRA INTERSECTION analyses conducted to assess the intersection delay impacts of the Project (refer to Section 5.2 of the Road Transport Assessment) include outputs for the 95th percentile queues in the turning lanes at the three as-constructed intersections. Those outputs are summarised in Table 1.



Table 1: 95th Percentile Back of Queue (vehicles)

Intersection and Movement	Scenario	_	)22 hs 1-6	_	)22 ns 7-12	20	23	20	29
		AM	PM	AM	PM	AM	PM	AM	PM
Peak Downs Mine Road and for	mer Dysart Roc	ıd							
Peak Downs Mine Road right turn lane	Base Project Alternative	0.0 0.0 0.0							
Peak Downs Mine Road left turn lane	Base Project Alternative	0.0 0.0 0.0							
Former Dysart Road left and right turns	Base Project Alternative	0.0 0.1 0.1	0.1 0.2 0.2	0.0 0.0 0.2	0.1 0.2 0.5	0.0 0.0 0.2	0.1 0.1 0.4	0.1 0.1 0.4	0.1 0.1 0.2
Peak Downs Mine Road and Ea	gle Downs Min	e Road							
Peak Downs Mine Road right turn lane	Base Project Alternative	0.1 0.1 0.1	0.0 0.0 0.0	0.1 0.1 0.1	0.0 0.0 0.0	0.1 0.1 0.1	0.0 0.0 0.0	0.1 0.1 0.1	0.0 0.0 0.0
Peak Downs Mine Road left turn lane	Base Project Alternative	0.0 0.0 0.0							
Eagle Downs Mine Road right turn lane	Base Project Alternative	0.1 0.1 0.1	0.9 1.0 0.9	0.1 0.3 0.2	0.9 1.7 1.0	0.1 0.3 0.1	0.8 1.3 0.9	0.0 0.3 0.1	0.8 1.0 0.9
Eagle Downs Mine Road left turn lane	Base Project Alternative	0.0 0.0 0.0	0.1 0.1 0.1	0.0 0.0 0.0	0.1 0.1 0.1	0.0 0.0 0.0	0.1 0.1 0.1	0.0 0.0 0.0	0.1 0.1 0.1
Peak Downs Mine Road and Peak Downs Highway									
Peak Downs Mine Highway right turn lane	Base Project	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Downs Mine Highway left turn lane	Base Project	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Downs Mine Road left and right turns	Base Project	1.4 1.4	2.2 2.6	1.4 1.7	2.2 3.5	1.3 1.6	2.1 3.0	1.6 2.3	2.8 3.4

Base = includes non-Project traffic changes due to growth and planned developments (Section 4.1 of TTPP [2021]).

Project = Base plus Project traffic.

Alternative = Project with alternative access option, refer to Appendix E of TTPP (2021).



Table 1 demonstrates that the Project would have no impact on the 95th percentile queue storage requirements in the auxiliary turn lanes in the major road approaches of the as-constructed intersections. Vehicles would not typically be expected to queue in those lanes, so there is no requirement for vehicle storage within the deceleration lanes. Section 5.1.1 of the Road Transport Assessment reviewed the deceleration lane lengths at the access intersections of Peak Downs Mine Road with the former Dysart Road and with Eagle Downs Mine Road against Austroads requirements. That assessment found that the deceleration lengths are consistent with the requirements. At the intersection of Peak Downs Mine Road with Peak Downs Highway, the left turn lane for entry to Peak Downs Mine Road is approximately 180 metres (m) long, and the right turn lane for entry to Peak Downs Mine Road is approximately 210 m long (both including the taper). These lengths exceed the Austroads requirements.

Considering the whole number of vehicles (rounding up) in the 95<sup>th</sup> percentile queue for each scenario, the Project traffic would impact the 95<sup>th</sup> percentile queues on the minor road approaches as follows:

- no impact on the queue on the former Dysart Road, which would remain at less than one vehicle during AM and PM peaks for all future scenarios;
- no impact on the left turn auxiliary lane queue in Eagle Downs Mine Road at Peak Downs Mine Road, which would remain at less than one vehicle during AM and PM peaks for all future scenarios;
- increase from less than one vehicle to less than two vehicles for the right turn lane in Eagle Downs Mine Road at Peak Downs Mine Road in the PM peak hour during the 6-month peak construction stage following commissioning of the Mine Access Road, and during the peak construction and initial operational stage in 2023. There would be no impact with the alternative Project access option. At the as-constructed intersection with Peak Downs Mine Road, Eagle Downs Mine Road has separate left and right turn lanes, separated by a painted island. The forecast peak hour 95th percentile queues of less than one vehicle in the left turn lane and less than two vehicles in the right turn lane with the Project can be generally accommodated within the existing layout without either queue interfering with or blocking the other. The exception would be if the two vehicles queued to turn right were both articulated vehicles, in which case, access to the left-turn lane would be momentarily unavailable; and
- increase from less than three vehicles to less than four vehicles in Peak Downs Mine Road at Peak Downs Highway in the PM peak hour from Month 7 to 12 of the construction stage and during the peak operational stage in 2029. At the as-constructed intersection with Peak Downs Highway, Peak Downs Mine Road has a single lane shared by both left and right turn movements, with no other minor roads or private accesses in the vicinity of the intersection. The minor increase in the PM peak hour 95th percentile queue on the Peak Downs Mine Road approach would have no discernible impact on the operation of the road network.



The geometry of the as-constructed intersections would therefore satisfactorily accommodate the 95<sup>th</sup> percentile queues of vehicles with the Project-generated traffic.

#### **Cumulative Effects**

The IRC requested the following:

Cumulative traffic impact assessment appears to rely on the full traffic volumes from the Olive Downs Project to identify the cumulative impact on Moranbah Access Road and Peak Downs Mine Road. The Olive Downs Project will not impact Peak Downs Mine Road and the full identified volume will not impact Moranbah Access Road.

Council requests the proponent re-evaluate the cumulative traffic impact assessment considering the advice above.

TTPP considers the traffic associated with the Olive Down Project has been appropriately assessed and included as part of the cumulative effects analysis for the Road Transport Assessment (TTPP, 2021). As outlined in the Road Transport Assessment (TTPP, 2021), the Olive Downs Project comprises the Olive Downs South Mining Domain, which will have vehicular access via Annandale Road and Daunia Road, and the Willunga Mining Domain, which will have vehicular access via Fitzroy Developmental Road. TTPP (2021) updated the forecasts presented by GTA Consultants in the Olive Downs Coking Coal Project Road Transport Assessment and its RFI Response Letter, based on information provided by Pembroke Olive Downs. The cumulative traffic impact assessment presented in the Road Transport Assessment includes the relevant components of the traffic generated by the Olive Downs Project on each part of the road network, based on the following travel routes:

#### Olive Downs South Domain Access Routes:

- to/from Moranbah town via Annandale Road, Daunia Road, Peak Downs Highway, Moranbah Access Road and Mills Avenue;
- to/from Dysart via Annandale Road, Daunia Road, Peak Downs Highway, Peak Downs Mine Road, Saraji Road and Garnham Drive;
- to/from Coppabella via Annandale Road, Daunia Road, Peak Downs Highway and Maloney Street;
- to/from Nebo and Mackay via Annandale Road, Daunia Road, and Peak Downs Highway; and
- to/from Middlemount via Annandale Road, Iffley Connection Road, Fitzroy Developmental Road and Dysart Middlemount Road.

# Willunga Domain Access Routes:

to/from Moranbah town via Fitzroy Developmental Road, Peak Downs Highway,
 Moranbah Access Road and Mills Avenue;



- to/from Dysart via Fitzroy Developmental Road, Peak Downs Highway, Peak Downs Mine Road, Saraji Road and Garnham Drive;
- to/from Coppabella via Fitzroy Developmental Road, Peak Downs Highway and Maloney Street;
- to/from Nebo and Mackay via Fitzroy Developmental Road and Peak Downs Highway;
- to/from Middlemount via Fitzroy Developmental Road and Dysart Middlemount Road.

Table 2 and Table 3 present the total Olive Downs Project traffic and its breakdown by trip origin for the Olive Downs South Domain and Willunga Domain respectively, during the Olive Downs Project peak hours. It is noted that TTPP did not prepare specific forecasts of the Olive Downs Project traffic travelling to and from Middlemount, as there would be no interaction between that traffic and Project traffic at any location on the road network so is not relevant to the Project assessment.

Table 2: Olive Downs South Domain Traffic in Year 2022, 2023 and 2029

Origin or	Workfor	Workforce Cars		Workforce Buses		Deliveries		Total	
Destination	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	
	Olive Do	wns Project A	AM Peak Hou	ur 6:00 am to	7:00 am (ve	hicles per ho	ur)		
Total	168	116	2	2	1	1	171	119	
Moranbah	82	56	1	1	0	0	83	57	
Dysart	43	30	0	0	0	0	43	30	
Coppabella	0	0	1	1	0	0	1	1	
Mackay	19	13	0	0	1	1	20	14	
	Olive Downs Project PM Peak Hour 5:00 pm to 6:00 pm (vehicles per hour)								
Total	116	168	0	0	0	0	116	168	
Moranbah	56	82	0	0	0	0	56	82	
Dysart	30	43	0	0	0	0	30	43	
Coppabella	0	0	0	0	0	0	0	0	
Mackay	13	19	0	0	0	0	13	19	
			Daily (ve	hicles per do	ay)				
Total	357	357	4	4	6	6	367	367	
Moranbah	172	172	2	2	1	1	175	175	
Dysart	91	91	0	0	0	0	91	91	
Coppabella	0	0	2	2	0	0	2	2	
Mackay	40	40	0	0	5	5	45	45	

Travel direction is for vehicles travelling to and from Olive Downs South Domain. Forecasts do not include traffic to/from Middlemount which does not overlap with Project-generated traffic at any location.



Table 3: Willunga Domain Traffic in Year 2029

Origin or	Workfor	Workforce Cars		Workforce Buses		Deliveries		Total		
Destination	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound		
	Olive Downs Project AM Peak Hour 6:00 am to 7:00 am (vehicles per hour)									
Total	61	42	2	2	1	1	64	45		
Moranbah	30	20	1	1	0	0	31	21		
Dysart	15	11	0	0	0	0	15	11		
Coppabella	0	0	1	1	0	0	1	1		
Mackay	7	4	0	0	1	1	8	5		
	Olive Downs Project PM Peak Hour 5:00 pm to 6:00 pm (vehicles per hour)									
Total	42	61	0	0	0	0	42	61		
Moranbah	20	30	0	0	0	0	20	30		
Dysart	11	15	0	0	0	0	11	15		
Coppabella	0	0	0	0	0	0	0	0		
Mackay	4	7	0	0	0	0	4	7		
	•		Daily (ve	hicles per de	ay)					
Total	129	129	4	4	2	2	135	135		
Moranbah	62	62	2	2	0	0	64	64		
Dysart	33	33	0	0	0	0	33	33		
Coppabella	0	0	2	2	0	0	2	2		
Mackay	14	14	0	0	2	2	16	16		

Travel direction is for vehicles travelling to and from Willunga Domain. Forecasts do not include traffic to/from Middlemount which does not overlap with Project-generated traffic at any location.

Table 4 and Table 5 present the total traffic generated by the Olive Downs Project on Moranbah Access Road (i.e., to and from Moranbah) and on Peak Downs Mine Road (i.e., to and from Dysart) during the Olive Downs Project peak hours. These include both the Olive Downs South Domain and Willunga Domain, and are the volumes used in the cumulative impact assessments presented in the Road Transport Assessment.



Table 4: Olive Downs Project Traffic on Moranbah Access Road

	Workforce Cars		Workford	ce Buses	Deliveries		Total		
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	
	Years 2022-2023								
6:00 am to 7:00 am	82	56	1	1	0	0	83	57	
5:00 pm to 6:00 pm	56	82	0	0	0	0	56	82	
Daily	172	172	2	2	1	1	175	175	
	Year 2029								
6:00 am to 7:00 am	112	76	2	2	0	0	114	78	
5:00 pm to 6:00 pm	76	112	0	0	0	0	76	112	
Daily	234	234	4	4	1	1	239	239	

Moranbah Access Road between Peak Downs Highway and Mills Avenue. Inbound is southbound and outbound is northbound.

Table 5: Olive Downs Project Traffic on Peak Downs Mine Road

	Workforce Cars		Workford	ce Buses	Deliveries		Total		
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	
	Years 2023-2023								
6:00 am to 7:00 am	15	11	0	0	0	0	15	11	
5:00 pm to 6:00 pm	30	43	0	0	0	0	30	43	
Daily	91	91	0	0	0	0	91	91	
	Year 2029								
6:00 am to 7:00 am	58	41	0	0	0	0	58	41	
5:00 pm to 6:00 pm	41	58	0	0	0	0	41	58	
Daily	124	124	0	0	0	0	124	124	

Peak Downs Mine Road between Peak Downs Highway and Garnham Drive. Inbound is northbound and outbound is southbound.

The traffic volumes presented in Table 4 and Table 5 are included in the cumulative traffic impact assessment on Moranbah Access Road and Peak Downs Mine Road and the relevant intersections, not the full traffic generation of the Olive Downs Project. As such, the reevaluation of the cumulative impacts is not required.



## **Information Currency**

The IRC requested the following:

The EIS refers to a superseded version of the Queensland Transport and Roads Investment Program (QTRIP). Council requests the proponent update the Transport Impact Assessment to reflect the current version of the QTRIP.

The Queensland Transport and Roads Investment Program 2021-22 to 2024-25 (QTRIP) (TMR, 2021) details the current transport and road infrastructure projects that the Queensland government plans to deliver. A number of capacity improvements are planned on the State and Local road networks in the vicinity of the Project, as summarised in Table 6, which updates Table 3.10 of the Road Transport Assessment, which referred to an earlier version of QTRIP.

Table 6: QTRIP Scheduled Works 2021-22 to 2024-25

Location Description	Investment Description
Various locations (Wolfang)	Rehabilitate and widen
Wuthung Road – Caval Ridge Mine	Widen and strengthen pavement
-	Improve safety
-	Active transport options analysis
	Various locations (Wolfang)  Wuthung Road – Caval Ridge Mine

Source: QTRIP

In the Road Transport Assessment, TTPP identified that the intersection of Mills Avenue with Moranbah Access Road would require upgrading to a seagull arrangement to achieve an acceptable level of service under base conditions without the Project. Any upgrading of the intersection would appropriately assess active transport options.

### Peak Downs Mine Road Level Crossing

DTMR requested the following:

The draft EIS has not assessed the potential safety impacts on existing railway level crossing on Peak Downs Mines Road.



#### Australian Level Crossing Assessment Model

The submission requests specific information be provided with respect to the level crossing on Peak Downs Mine Road for input to the Australian Level Crossing Assessment Model, and a review of short stacking over the level crossing. The requested information is presented below:

• The expected timeframe for the delivery of the proposed development including the commencement of construction and the commencement of use (including any stages).

The nominal Project timing (Section 2.3 of Road Transport Assessment) is:

- Year 1 initial construction stage in 2022;
- Year 2 peak construction and initial coal production stage in 2023;
- Year 8 peak operational stage in 2029; and
- Year 30 (approximately) end of operational life.
- Existing traffic flows (expressed as vehicles per day) over the impacted railway level crossing/s, including daily (peak hour) fluctuation, and number and percentage of heavy vehicles and buses (workforce transport).

Traffic was surveyed on Peak Downs Mine Road south of Eagle Downs Mine Road and north of the level crossing in October 2019 (refer to Section 3.4 of the Road Transport Assessment), from which estimates of Annual Average Daily Traffic (AADT) were developed (refer to Section 4.1.1 of the Road Transport Assessment) and estimates of the other requested data have been developed based on the surveyed conditions. These are presented in Table 7.

Table 7: Existing Traffic Flows at Peaks Downs Mine Road Level Crossing

	Estimated 2019 AADT
Vehicles per day	1,613
Peak hour vehicles	206
Rigid heavy vehicles per day <sup>A</sup>	316
% rigid heavy vehicles	19.6%
Articulated heavy vehicles per day	175
% articulated heavy vehicles	10.8%
Total heavy vehicles	491
% heavy vehicles	30.4%

A inclusive of buses, the data does not distinguish buses from other rigid heavy vehicles



• The expected background traffic growth (expressed as vehicles per day) over the impacted railway level crossing/s, including the number and percentage of heavy vehicles and buses. This should include background traffic growth from the anticipated commencement of construction and each development stage to a ten-year horizon.

This information is presented in Table 8 for the assessment scenarios assessed in the Road Transport Assessment, representing peak conditions, and including the breakdown of the components of the forecast totals.

Table 8: Non-Project Traffic at Peaks Downs Mine Road Level Crossing (AADT)

	2019	2022	2023	2029					
Vehicles per day									
Existing and background growth	1,613	1,712	1,745	1,967					
Eagle Downs Mine	0	108	83	62					
Olive Downs Project	0	182	182	248					
Total	1,613	2,002	2,010	2,277					
	Heavy vehi	cles per day <sup>A</sup>							
Existing and background growth	491	512	531	599					
Eagle Downs Mine	0	20	11	4					
Olive Downs Project	0	0	0	0					
Total	491	542	542	603					
% Heavy vehicles per day	30.4%	27.0%	27.0%	26.5%					

A includes buses

the expected development generated traffic (expressed as vehicles per day), including
daily fluctuations (peak hour) and percentage of heavy vehicles and buses, that will pass
over the impacted railway level crossing/s from the commencement of construction,
and each development stage to a ten-year design horizon. It is noted that workers may
be transported via bus from workers camps.

This information is presented in Table 9 for the assessment scenarios assessed in the Road Transport Assessment, representing peak conditions.



Table 9: Project-Generated Traffic at Peaks Downs Mine Road Level Crossing

	Initial Construction 2022		Peak Construction and Initial Coal Production	Peak Operation				
	Months 1 to 6			2029				
Main Project Access								
Vehicles per day	168	2	2	4				
Peak hour vehicles	24	1	1	1				
Light vehicles per day	116	2	2	4				
Buses per day	12	0	0	0				
% buses	7.1%	0%	0%	0%				
Heavy vehicles per day <sup>A</sup>	40	0	0	0				
% heavy vehicles <sup>A</sup>	23.8%	0%	0%	0%				
		Alternative Access	Option					
Vehicles per day	226	674	486	296				
Peak hour vehicles	32	78	64	53				
Light vehicles per day	154	442	324	218				
Buses per day	16	32	26	18				
% buses	7.1%	4.7%	5.3%	6.1%				
Heavy vehicles per day <sup>A</sup>	56	200	136	60				
% heavy vehicles <sup>A</sup>	24.8%	29.7%	28.0%	20.3%				

A excluding buses

• the maximum size and type of vehicle (including length, width, height and weight)
anticipated over the impacted railway level crossing/s as a result of the development
during construction and on-going operation (including any stages). This should include
any over-mass and over-dimension vehicles used to transport components.

During the initial construction stage, B-doubles would use the Peak Downs Mine Road level crossing. While the specific vehicle characteristics cannot be identified, the characteristics of the most common B-double combinations are presented in Table 10.

Table 10: Common B-double Configurations

		Maximum Length (m)	Maximum Regulatory Mass under GML (tonnes)	Maximum Regulatory Mass under CML (tonnes)	Maximum Regulatory Mass under HML (tonnes)
6.0t 16.5t 16.5t 16.5t	7 Axle B-double	≤ 19.0	55.5	57.0	57.0
6.0t 16.5t 20.0t 16.5t	8 Axle B-double	≤ 26.0	59.0	61.0	62.5
6.0t 16.5t 16.5t 20.0t	8 Axle B-double	≤ 26.0	59.0	61.0	62.5
6.0t 16.5t 20.0t 20.0t	9 Axle B-double	≤ 26.0	62.5	64.5	68.0

Source: National Heavy Vehicle Regulator



#### Short Stacking

The level crossing at Peak Downs Mine Road has no nearby intersections or vehicular accesses, with the nearest intersections being approximately 2.7 kilometres (km) to the south (former Dysart Road) and 8.0 km to the north (Eagle Downs Mine Road). There is no likelihood of short stacking, and further assessment of the matters raised by DTMR is not warranted.

## **Oversize Overmass Movements**

The IRC requested the following information:

Council seeks confirmation the proponent will seek and comply with permit approval conditions issued by IRC.

The proponent is requested to demonstrate OSOM vehicle movements associated with (but not limited to) rail spur, CHPP and MIA construction and plant and fleet deliveries have been considered and Council's curfew has been accounted for.

The Project may require some oversize overmass (OSOM) vehicles movements on an "as required" basis during construction and operation of the Project. OSOM vehicle movements would be undertaken and managed in accordance with relevant guidelines (e.g., National Heavy Vehicle Regulator guidelines) and requirements of any permit approvals conditions and curfews provided by the relevant Government agencies (e.g., no OSOM vehicle movements between 5 am - 7 am and 5 pm - 7 pm on Moranbah Access Road and Peak Downs Mine Road provided by the IRC) and would include consideration of any level crossings. The specifications (e.g. maximum size and type) of any OSOM vehicle movements, if required, would be provided with any permit application material to the relevant Government agencies.

We trust the above is to your satisfaction. Should you have any queries regarding the above or require further information, please do not hesitate to contact the undersigned on 8437 7800.

Yours sincerely,

Penny Dalton
Associate Director

Matton.

Encl. Swept Path Analysis plans





