

**APPENDIX C7**

**Addendum to the Traffic Impact Assessment**

Your ref:  
Our ref: 12568407

16 September 2022

Tom Hatfield  
APA Group  
580 George Street  
Sydney, NSW 2000

## Kurri Kurri Lateral Pipeline Project Traffic Impact Assessment – Addendum

Dear Tom,

In light of the recent design changes to the Kurri Kurri Lateral Pipeline Project, a review has been completed to assess the new design's impact to the outcomes of the Traffic Impact Assessment (TIA)<sup>1</sup>.

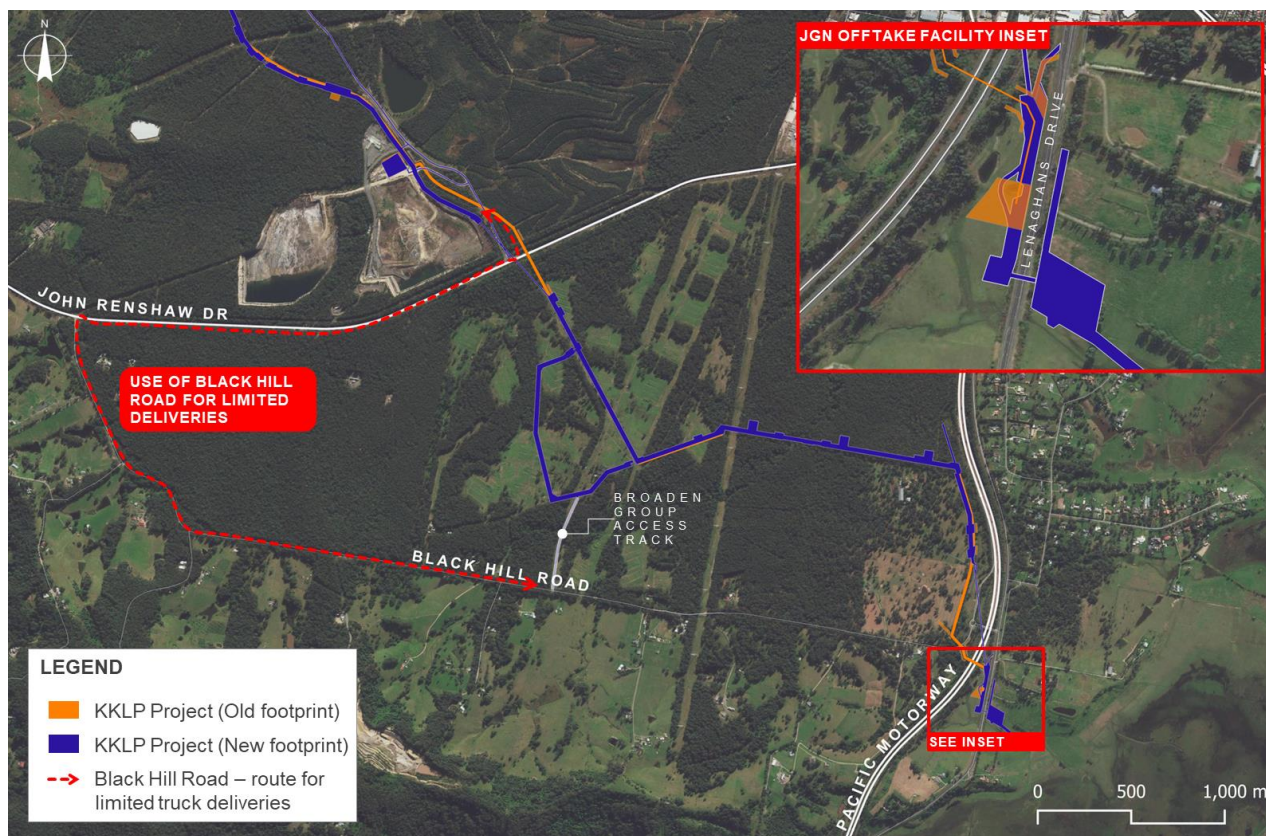
## 1. Project design updates

The updates to the project design which affect the TIA include:

Table 1-1 Project design updates impacting traffic

	KKLP TIA (March 2022)	Design update
<b>Infrastructure</b>		
JGN Offtake Facility	– Offtake facility to be located west of Lenaghans Drive on Lot 146.	– Offtake facility to be located on the eastern side of Lenaghans Drive on Lot 453 DP 807778. Refer to Figure 1-1.
<b>Logistics</b>		
Black Hill Road	– Not impacted by project activities.	<ul style="list-style-type: none"> <li>– 3-km section of Black Hill Road from John Renshaw Drive to Broaden Group Property access to be utilised for limited truck deliveries (refer to Figure 1-1)</li> <li>– All deliveries using this road would be carried out outside of peak traffic periods and school drop-off times. <ul style="list-style-type: none"> <li>• Nine truck deliveries of line pipe from stockpile on Donaldson Coal Mine over one day.</li> <li>• Five truck deliveries for mobilisation of HDD equipment over one day (delivered on a different day to pipe deliveries).</li> <li>• Five truck deliveries for de-mobilisation of HDD equipment over one day (HDD will take approx. 1 month to complete).</li> </ul> </li> </ul>
Delivery of equipment skids	<ul style="list-style-type: none"> <li>– Approximately 94 truck deliveries from Port of Newcastle via the following haulage route: <ul style="list-style-type: none"> <li>• Maitland Road &gt; New England Highway &gt; John Renshaw Drive &gt; Hunter Expressway</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>– Equipment skids to be delivered from Port Kembla rather than the port of Newcastle. New haulage route would be as follows: <ul style="list-style-type: none"> <li>To compressor station / delivery station (70% of deliveries) <ul style="list-style-type: none"> <li>• M1 Pacific Motorway &gt; Hunter Expressway &gt; Harts Road</li> </ul> </li> <li>To JGN offtake facility (30% of deliveries) <ul style="list-style-type: none"> <li>• M1 Pacific Motorway &gt; Lenaghans Drive</li> </ul> </li> </ul> </li> </ul>

<sup>1</sup> GHD. (2022, March). Kurri Kurri Lateral Pipeline Project Traffic Impact Assessment



**Figure 1-1** Design changes impacting traffic

## 2. Existing conditions

Black Hill Road (pictured in Figure 2-1) is local road that runs an approximate east-west alignment, beginning at John Renshaw Drive in the west and crossing over M1 Pacific Motorway in the east before terminating at the intersection with Lenaghans Drive. The key features of Black Hill Road are provided in Table 2-1.

**Table 2-1** Black Hill Road key features

Feature	Description
Carriageway	Sealed undivided carriageway with two lanes catering to two-way traffic. Carriageway widths of approximately 7 meters (3.5 meters per lane).
Parking	No designated parking facilities available on-street.
Speed Limit	80 km/h, with reduced limits of <ul style="list-style-type: none"> <li>– 75 km/h at road bends</li> <li>– 55 km/h at zigzags</li> </ul>
Pedestrian Facilities	No pedestrian facilities are provided.
Bicycle Facilities	On-road cycling facilities provided with shoulder area on the northern section of the road.
Public Transport	No bus stop facilities are provided along the length of the road.
Heavy vehicle access	Requires consent. Not part of heavy vehicle network.



Image Source: Google Street View || (L) View facing south, coming from John Renshaw Drive; (R) View facing east, near Broaden Group Property access

**Figure 2-1 Black Hill Road**

Traffic volumes for Black Hill Road are summarised in Table 2-2. Traffic counts for 2022 were estimated from 2017 traffic volume data using a growth rate of 1 per cent per annum. The existing mid-block level of service (LOS)<sup>2</sup> for Black Hill Road is provided in Table 2-3.

**Table 2-2 Traffic volume count summary**

Road Name	Direction	Peak hour		Traffic volumes (2017) *		
		AM	PM	AADT	AM Peak	PM Peak
Black Hill Road	Eastbound	08:00 - 09:00	15:00 - 16:00	245	50	38
	Westbound	08:00 - 09:00	15:00 - 16:00	229	47	37

\* Data source: Cessnock City Council. Traffic volume counts – Black Hill Road 1km east of Taylors Road (week of August 7, 2017)

Note: traffic volumes are in vehicles per hour (one-way movements)

**Table 2-3 Existing mid-block LOS**

Road Name	Direction	Lanes per direction	AADT	Existing traffic (2022)		LOS (2022)	
				AM Peak	PM Peak	AM Peak	PM Peak
Black Hill Road	Eastbound	1	257	53	40	A	A
	Westbound	1	240	49	39	A	A

As shown, Black Hill Road currently operates at an LOS of A, indicating free flow and virtually unimpeded traffic. This means that the road has significant spare capacity to accommodate additional vehicles.

## 3. Impact assessment

### 3.1 Changes in traffic movement

#### JGN offtake facility relocation

The relocation of the offtake facility would not impact vehicle routes for both light and heavy vehicles. This design update is not expected to affect the outcomes of the original TIA (March 2022) in terms of vehicle traffic and LOS for Lenaghan's Drive.

#### Limited truck deliveries along Black Hill Road

All truck deliveries along Black Hill Road (as described in Table 1-1) would be carried out outside of peak traffic periods and school drop-off/pick-up times. Additionally, the deliveries would not occur during the same day, and would also not be expected to coincide with the peak construction period (around April 2023. Refer to Figure 4-1 of KKLTP TIA).

However, for the purposes of a conservative assessment, the following truck deliveries have been

<sup>2</sup> Refer to Section 3.3.2 of Kurri Kurri Lateral Pipeline Project TIA (March 2022) for mid-block assessment methodology.



considered for the mid-block assessment of Black Hill Road:

- Four truck deliveries per hour (equivalent to eight vehicle movements per hour). This is assuming 20 truck deliveries per day delivered across a 5-hour off-peak window between 10:00 am - 3:00 pm.

The resulting traffic volumes for Black Hill Road by year 2023 is provided Table 3-1. As shown, even with additional traffic from the construction activities, Black Hill Road would continue to operate at LOS A. The use of Black Hill Road for limited truck deliveries would not negatively impact road operations.

**Table 3-1 Forecast increase in peak hour two-way traffic volumes – 2023 with construction**

Road Name	Direction	Lanes per direction	Future traffic (2023)*				Future traffic (2023 with construction)					
			Traffic Volume		LoS		Traffic Volume				LoS	
			AM Peak	PM Peak	AM Peak	PM Peak	AM Peak (vph) (% increase from 2023 base traffic)	PM Peak (vph) (% increase from 2023 base traffic)			AM Peak	PM Peak
Black Hill Road	Eastbound	1	54	40	A	A	58	7%	44	10%	A	A
	Westbound	1	49	39	A	A	53	8%	43	10%	A	A

\* Assuming 1% growth rate per annum. Traffic volumes are in vehicles per hour

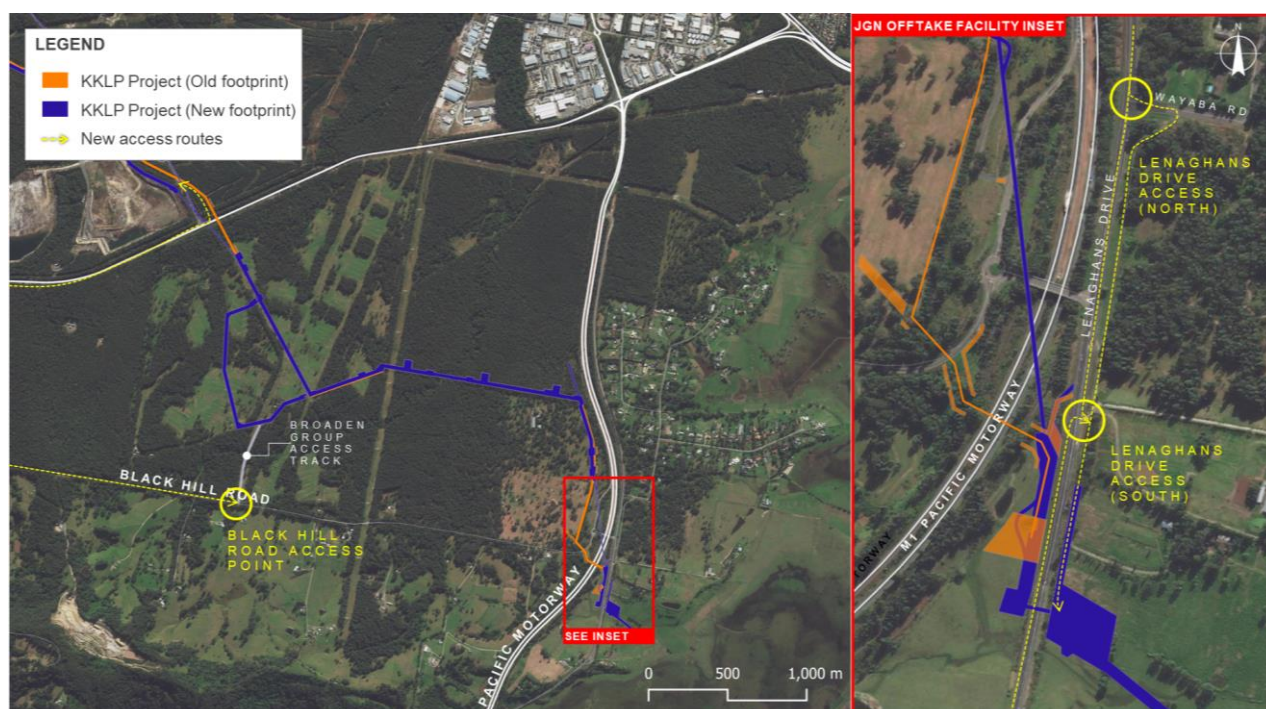
### Delivery of equipment skids via Port Kembla instead of Port of Newcastle

The initial assessment (KKLP TIA, March 2022) indicates that, even with construction traffic in 2023, M1 Pacific Motorway would continue to operate at the range of LOS A to B, and Hunter Expressway would continue to operate at LOS A. Both roads would have ample capacity to accommodate the additional vehicles indicated in Table 1-1.

The change in haulage route would divert approximately 94 truck deliveries (over the entire course of the construction period) away from local roads and New England Highway (currently operating at LOS B to D) to the higher-capacity M1 Pacific Motorway and Hunter Expressway. This design update would reduce traffic impacts to the immediate road network and minimise use of local roads near the Port of Newcastle.

## 3.2 Worksite access sight distance

The following new access points are expected to be utilised to access the proposed construction spaces under the new design (refer to Figure 3-1): Black Hill Road – Broaden Group Property access track, and Lenaghans Drive new northern and southern access point.



**Figure 3-1 New access points**

Table 3-2 provides a review of the sight distance requirements for the new access points.

**Table 3-2** Sight distance requirement for cars and trucks

Location	Design Speed (km/h)	ASD (minimum requirement)			SISD (minimum requirement)		
		Required (m)		Measured (direction from access)	Required (m)		Measured (direction from access)
		Cars	Trucks		Cars	Trucks	
Lenaghans Drive (north)	80	114	131	300 m (north)	181	216	300 m (north)
				270 m (south)			270 m (south)
Lenaghans Drive (south)	80	114	131	120 m (north)	181	216	230 m (north)
				70 m (south)			190 m (south)
Black Hill Road	80	114	131	60 m (west)	181	216	160 m (west)
				100 m (south)			150 m (south)

*Requirements derived from Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads, 2021)*

As shown, the measured sight distances for Lenaghans Drive south access and Black Hill Road do not meet minimum sight distance requirements. Both access points are noted to be located at road crests, with significant vegetation (tall grass at Lenaghans Drive access) and trees obscuring the view. Traffic management measures must be implemented to mitigate potential safety impacts of the use of these new access points.

## 4. Management and mitigation

The following additional measures are recommended to maintain safe road operations and minimise any impacts to other road users:

- Implementation of the following project rules for all project vehicles should be incorporated into the Traffic Management Plan for the Project:
  - The use of Black Hill Road should be limited to truck deliveries as described in the heavy vehicle access consent application. No other construction traffic vehicles can use the road for the duration of the works.
  - Vehicles accessing the JGN offtake facility site from the north should utilise the northern access point from Lenaghans Drive.
  - Drivers should be instructed to adjust speeds to suit the road environment and weather conditions appropriately to ensure the safe movement of the vehicles based on the individual vehicle configurations.
  - When exiting through the new access points, drivers should come to a complete stop at the intersection and ensure the exit is clear from pedestrians, cyclists, and other vehicles before proceeding. For heavy vehicles, a traffic controller / flagman on the ground should assist with this manoeuvre to ensure that any blind spots are covered.
  - All heavy vehicles should enter and exit sites in a forward direction.
- Traffic Guidance Schemes (TGSs) should be developed by the Lead Contractor to manage the movement of project vehicles through haulage roads to communicate changes in the operation of affected roads.
  - Implement a speed limit of 40 km/h in the vicinity of the site access points.
  - Installation of truck warning signage (Changed traffic conditions, Truck crossing/entering) and speed limit signage at appropriate locations to be determined by a qualified person.
  - Signage will be installed by a suitably qualified traffic management contractor on all approaches to the work zone, in accordance with any approved TGS.
- Key stakeholders, including owners/operators of adjacent lands and emergency service providers, should be notified of the use of Black Hill Road and Lenaghans Drive as haulage routes.

Please contact me at [Owen.Peel@ghd.com](mailto:Owen.Peel@ghd.com) if you have any queries arising from this Traffic Assessment Report.

Thank you.

Regards

A handwritten signature in dark ink, appearing to be 'Owen Peel'.

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