

# Technical Design Note

**Project:** Kariong Sand and Soil  
**Subject:** Request for Further Information  
**Date:** 10 December 2020  
**Attention:** Mark Jackson – Jackson Environment and Planning

Issue	Response
<p>The Department notes traffic surveys were undertaken in 2017 and raises concerns about whether the survey results sufficiently represent the current traffic conditions as a result of recent proposed and completed development. As such, please provide a more recent survey result adequately representing the existing traffic in the site's vicinity and key intersections performance.</p> <p>Should a new traffic survey be undertaken, considering the COVID-19 pandemic, counts undertaken at the moment may not be representative. Alternative approaches to understanding the impact of COVID-19 pandemic on traffic patterns should be discussed with TfNSW.</p>	<p>Updated traffic surveys have been completed at the roundabout controlled intersection of Wisemans Ferry Road and Gindurra Road (11/11/2020) for the AM and PM peak period.</p> <p>Updated Sidra modelling completed – see below.</p>
<p>The Traffic Impact Assessment (TIA) states traffic surveys were undertaken at Central Coast Highway/Kangoo Road and Central Coast Highway/Wisemans Ferry Road intersections. Please provide traffic survey result of Central Coast Highway/Kangoo Road intersection for the completeness of the report.</p>	<p>These surveys were included in pages 36 and 37 Appendix E of the report.</p> <p>Re-attached to this RFI</p>
<p>The TIA should assess the worst-case scenario when waste delivery vehicles from south using Central Coast Highway/Kangoo Road intersection and its impacts on the intersection performance.</p>	<p>Waste delivery vehicles will not use Kangoo Road due to weight limit. All heavy vehicles will access the site via Wisemans Ferry Road / Gindurra Road.</p>
<p>The TIA does not detail the proposed management measures for prohibiting waste delivery vehicles using Kangoo Road, Acacia Road and Debenham Road South to access the site. Please detail the management measures in the RtS.</p>	<p>A Driver Code of Contact shall be included in the Traffic Management Plan for the site and provided to all staff as part of the driver / contractor training to be provided</p>
<p>Please provide SIDRA modelling results for Wisemans Ferry Road/Gindurra Road intersection (the overall Level of Service (LoS) and LoS at AM and PM peaks in the TIA.</p>	<p>This was included in the report, Page 21 Sidra Assessment second table.</p> <p>Updated assessment completed based on current traffic flows – see below.</p>
<p>The queueing analysis included in Section 3.2.4 of the TIA is insufficient considering it does not detail how long would it take for a truck to be processed at the weighbridge including weighing and visual inspection of waste load. Please clarify and provide additional queueing analysis in the RtS.</p>	<p>The location of the weighbridge allows a truck to be on the weighbridge and 3 further truck+dog combinations (19 metres long) to wait to access the weighbridge. The peak hourly flow of 21 trucks allows for 9 trucks to be entering in a single hour. It is therefore considered that the queue will not extend back on Gindurra Road.</p>
<p>Please respond to all issues raised in the peer review</p>	<p>Updated Sidra assessment completed. See below</p>



prepared by Intersect Traffic dated 22 September 2020.	
<ul style="list-style-type: none"> <li>+ On-street parking within Gindurra Road will no longer be available when the line marking associated with the channelised right turn bay into the development is implemented.</li> <li>+ Concrete kerbing proposed to deny right turn movements out of the site should not obstruct the footway.</li> <li>+ The plans for the development do not appear to set back the entry gates as per the recommendation of the TIA.</li> </ul>	<p>Noted. All parking demands for the project can be accommodated on site.</p> <p>The concrete kerb traffic island will be designed and constructed in accordance with Council design standards. It is noted that there is no footway in this location.</p> <p>The plan allows for 60 metres between the gate and the weighbridge.</p>
+ As noted in our previous submission, it is advised that the proposed right turn treatment on Gindurra Road at the site access be designed in accordance with the current versions of Austroads Guide to Road Design Part 4 and Part 4A.	Design has been updated and is in accordance with Austroads Guidelines.

Comments from peer review by Intersect

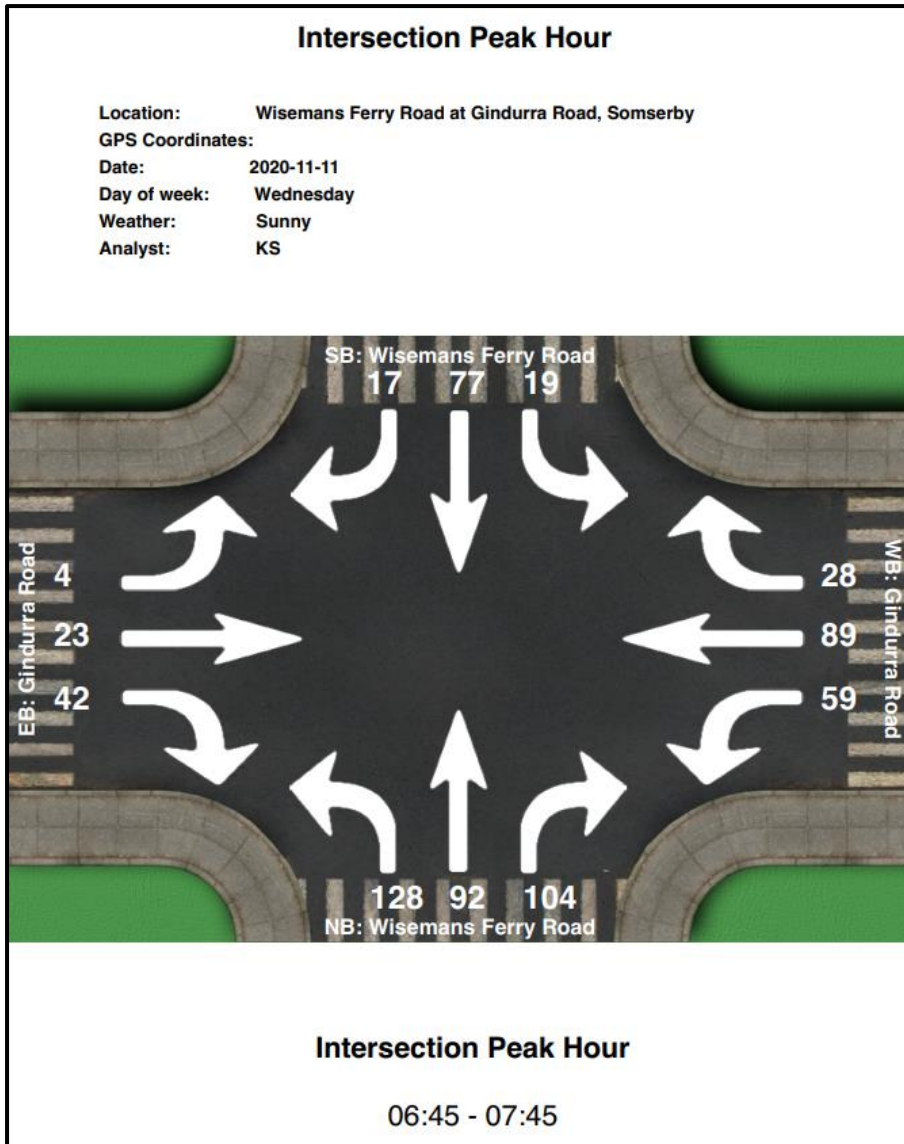
<p>Queuing of vehicles on the road network. In the Kariong Sand and Soil report there is a general statement that vehicles will arrive once every 5 minutes therefore two queuing spaces should be enough, but they do not prove it. No detail on service times or length of stays for vehicles or the internal capacity of the site to cater for vehicles has been provided. Also in a peak hour there will actually be a vehicle arriving every 3 minutes (21 vtpH) so the report has not addressed peak hour traffic from a queuing perspective and the queue lengths could be predicted using queuing theory to determine if there is enough queuing area on the site such that queuing trucks will not impede traffic on Gindurra Road. Therefore I am of the opinion the report does not prove there is enough queuing space on-site.</p>	<p>Typical time for vehicles using the weigh bridge is less than 2 minutes, allowing for vehicle to stop, weight noted and driver details taken etc.</p> <p>Assuming an equal split of vehicle arrivals, there will be a single vehicle waiting prior to the weighbridge, when there is a truck already on the weighbridge.</p> <p>There will not be more than 2 trucks arriving at any one time to the site.</p> <p>The layout of the site provides 60 metres between the entry point of the site and weighbridge. A truck and dog combination is 19 metres, therefore with a vehicle on the weighbridge there is adequate space for 3 further truck+dog combinations to be parked on site. Given the spread of arrivals across a typical hour there will not be 4 trucks all arriving at the same time and as such there will not be a queue back onto Gindurra Road.</p>
<p>The traffic data used for the traffic assessment is 5 years old. For an important development like this current traffic data should be used. Whilst it is understood undertaking traffic counts in June and July this year would have resulted in reduced traffic volumes due to the impacts of COVID 19 and the requirement to isolate as much as possible. However traffic volumes are now considered to be close enough to pre COVID volumes for traffic counting to recommence. Given the amount and type of traffic generated by this development I would have thought Council and TfNSW should be requiring that updated traffic</p>	<p>Updated traffic surveys and Sidra modelling completed. This assessment allowed for the traffic flows associated with the subject site as well as the proposed warehouse development at 83 Gindurra Road (located opposite the subject site).</p> <p>See Sidra assessment below.</p>

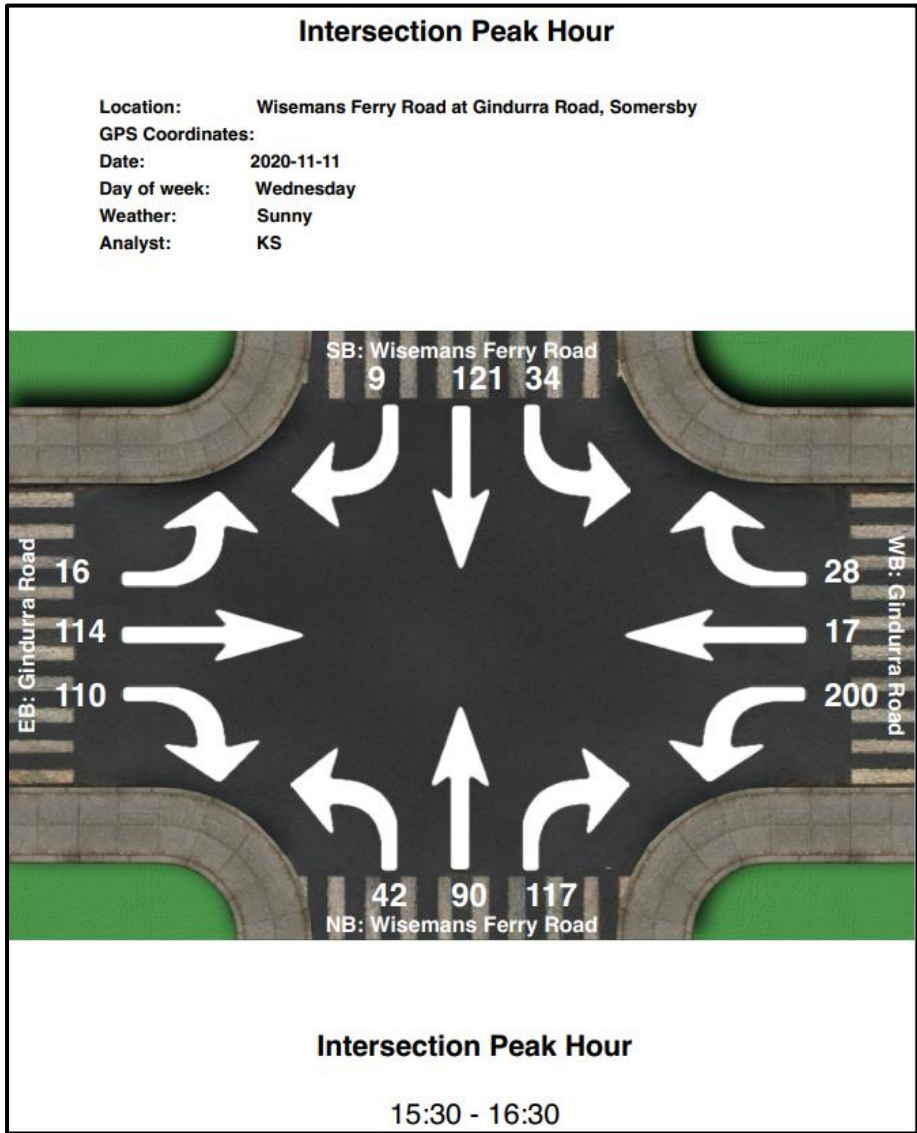
<p>counts be used in this assessment.</p>	
<p>I am not sure that the measures to stop vehicles heading through the rural residential area to the east is sufficient. At the moment they are only suggesting signposting at the access. I think new load limit signs and enforcement should occur to the east of the site and the development should ensure all heavy vehicle drivers using the site are aware of and sign off on a driver code of conduct for the development.</p>	<p>A drivers code of conduct shall be developed in conjunction with a traffic management plan. This drivers code of conduct will include details on the access route in and out of the site and highlight that heavy vehicles are not permitted to turn right out of the site. The central median in the driveway also directs drivers to turn left out of the site only.</p> <p>Signs will be provided at the site exit point to the site to remind drivers of heavy vehicle to turn left out of the site only.</p>
<p>Both traffic impact reports do not appear to have considered the cumulative impacts of other development in the area, not the least being the cumulative impacts of traffic from the other development. Whilst they consider the impacts of their own traffic generation at least one of the reports should consider the impacts of the combined traffic from both developments. This has not been done and given the same consultant was used for each report it would have been easy for this to be done.</p>	<p>Updated Sidra assessment completed. See below.</p>
<p>It is noted that the Sidra modelling was done for 2017 traffic, yet the report was dated July 2020. It is my opinion that the modelling should have been undertaken for 2020 conditions including the cumulative impacts of both developments. While this is unlikely to have a major impact on the operation of the Wiseman’s Ferry Road / Gindurra Road roundabout it may not be the case with the Central Coast Highway / Wiseman’s Ferry Road traffic signals where an overall LoS C already exists.</p>	<p>New traffic surveys completed at Wisemans Ferry Road and Gindurra Road. Sidra modelling provided below for the current 2020 and future 2030 scenario.</p> <p>The intersection of Wisemans Ferry Road and Central Coast Highway has not been assessed in detail for this project. The volume of traffic associated with the project represents a very minor increase in the overall traffic flows in this location, with the major flow on the Central Coast Highway provided with priority at this location. In the AM peak there could be 21 vehicles associated with this project using this intersection. In the PM peak there would be 9.</p> <p>It is understood that TfNSW monitor this intersection and the traffic signals / layout have been maximised by TfNSW to accommodate the traffic flows at this intersection. TfNSW have also upgraded the M1 Pacific Highway to increase the number of traffic lanes in this location and the impact of the upgrade has been modelled. It is considered that this would include the signal-controlled intersection of the Central Coast Highway and Wisemans Ferry Road.</p>
<p>Further it is usual to undertake traffic impact assessments over a horizon period of 10 years and as such Sidra modelling of at least the Central Coast Highway / Wiseman’s Ferry Road traffic signals for the 2030 traffic conditions</p>	<p>The volume of traffic associated with the two separate projects shall have a minor impact upon the overall operation of this intersection. No Sidra modelling is considered to be required for this intersection. The volume of traffic will see a minor increase in flows at this location. It is further noted that drivers of light</p>

including the development traffic from both developments should have been undertaken as part of the traffic assessments for both developments.	vehicles may choose to use other routes to access the sites on Gindurra Road and avoid these traffic signals.
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Sidra assessment – intersection of Wisemans Ferry Road and Gindurra Road

Traffic surveys have been completed at the roundabout controlled intersection of Wisemans Ferry Road and Gindurra Road on 11<sup>th</sup> November 2020. The peak hour summary from these surveys is provided below.





The operation of the intersection has been assessed with Sidra and the modelling shows that the intersection is currently working very well, with minor delays and queues. The level of service for all movements and approaches is A for the AM and PM peak period. Level of service A is the highest level of service for an intersection as defined with the RTA Guide to Traffic Generating Development. Delays are less than 15 seconds for all movements.

This roundabout was then assessed for the 2020 scenario with the impact of the development flows assessed. This Sidra assessment has allowed for the traffic flows associated with the subject site as well as the proposed warehouse type development at 83 Gindurra Road. Located opposite the subject site. Seca Solution have prepared a traffic impact assessment for the development at 83 Gindurra Road and the traffic flows associated with that site have been sourced from that assessment.



The development flows for the two sites are given as:

- Kariong sand and soil – 17 vehicles in the AM peak and 9 in the PM peak
- Light industrial site at 83 Gindurra Road (opposite the subject site) are 74 trips in the AM and PM peak periods

In the AM peak, the majority of trips will be inbound towards the sites and in the PM peak the reverse flows will occur. The results of the Sidra assessment for the 2020 design year plus development flows are provided below.

*Table 1 – 2020 existing flows plus development flows (AM / PM peak)*

Approach	Level of service	Delay (seconds)	Queue (metres)
Wisemans Ferry Road northbound	A / A	7.1 / 6.7	17.8 / 9.6
Gindurra Road westbound	A / A	5.4 / 5.5	7.0 / 13.0
Wisemans Ferry Road southbound	A / A	6.2 / 6.1	5.2 / 7.2
Gindurra Road eastbound	A / A	9.7 / 7.6	4.7 / 9.3

NB – results for AM / PM peak

The roundabout was then assessed for the future design year of 2030. A background growth factor of 3% per annum was applied to all traffic volumes. The results of the Sidra assessment for the design year of 2030 are provided below.

*Table 2 - 2030 existing flows plus development flows (AM / PM peak)*

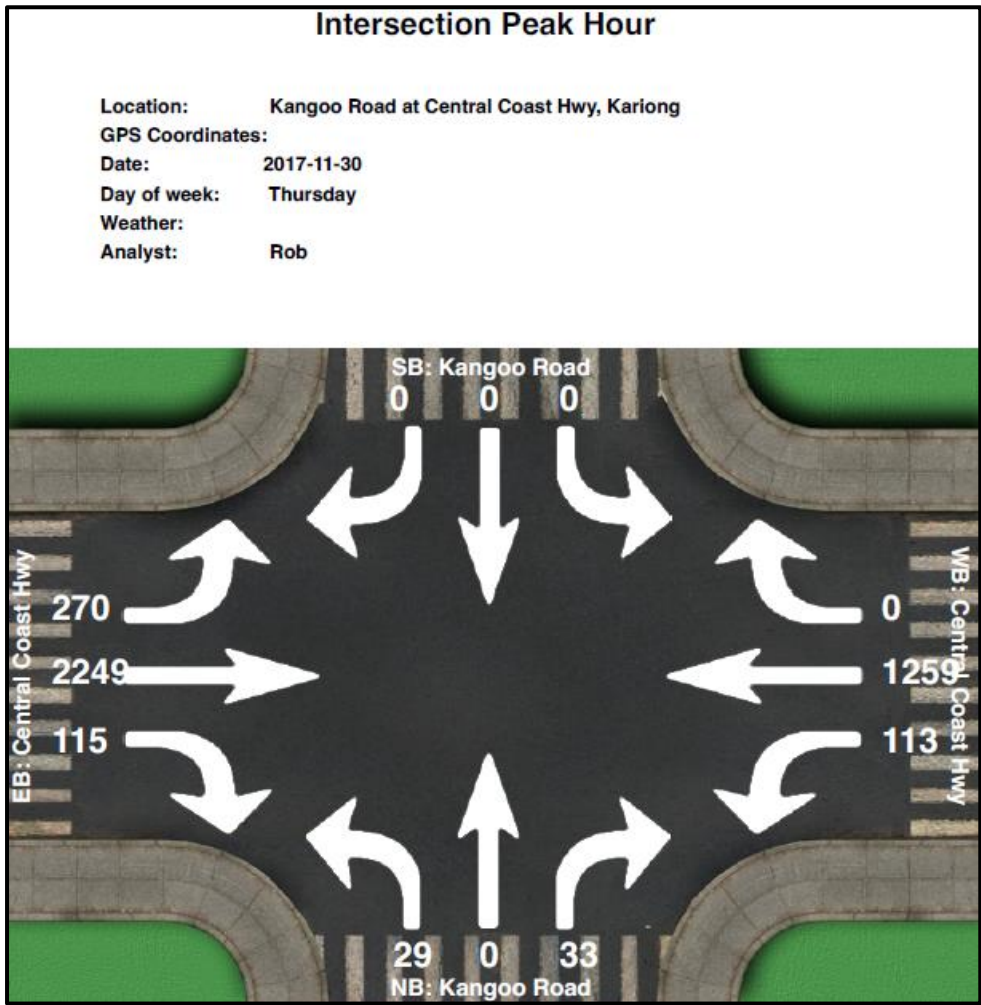
Approach	Level of service	Delay (seconds)	Queue (metres)
Wisemans Ferry Road northbound	A / A	7.6 / 6.9	27.5 /
Gindurra Road westbound	A / A	5.8 / 6.2	10.1 /
Wisemans Ferry Road southbound	A / A	6.8 / 7.0	7.7 /
Gindurra Road eastbound	A / A	10.6 / 8.2	7.1 /

NB – results for AM / PM peak

The Sidra modelling above confirms the roundabout at Wisemans ferry Road and Gindurra Road can continue to operate very well with minor delays and queues. The level of service for all movements remain at A for the AM and PM peak periods through to 2030 and beyond.



**Attachment A – Traffic data at Central Coast Highway and Kangoo Road**



### Intersection Peak Hour

**Location:** Kangoo Road at Central Coast Hwy, Kariong  
**GPS Coordinates:** Lat=-33.429411, Lon=151.291675  
**Date:** 2017-11-30  
**Day of week:** Thursday  
**Weather:**  
**Analyst:** Rob

