18 December 2015

To Patricia Grunert
General Manager, Heavy Vehicles Branch, Roads and Maritime Services

Copy to Peter Jamieson
Director Umwelt (Australia) Pty Ltd

From Graham McCabe
Service Leader, Transport Optimisation and Planning | Infrastructure Advisory

Subject Macka’s Sand, modification of PA08_0142 - increased truck movements - Nelson Bay Road

Job no. 22/17872

1 Purpose

This memorandum is to:

- Provide the General Manager, Heavy Vehicles with an understanding of the issues relating to heavy vehicle access from Macka’s Sands to Nelson Bay Road
- Seek reconsideration of the objection by Roads and Maritime to the increase in the number of heavy vehicle movements to the site.

2 Background

Major Project Approval 08_0142 (the approval) was granted on 20 September 2009 to Macka’s Sand Pty Ltd (Macka’s Sand) for the extraction of up to one (1) million tonnes of sand annually from the site. This consent allowed Macka’s Sand to access lot 218 by an unsealed road located within the Crown Road reserve from Nelson Bay Road.

The proponent, Macka’s Sand has applied to increase the number of heavy vehicle movements accessing their site via Nelson Bay Road, Williamtown. This is to meet an increasing market demand for sand being delivered to customers in Sydney and the Hunter which result from structural changes in the sand mining industry. These changes include the impending closure of the Penrith Lakes Scheme in December 2015. Macka’s Sand proposes to increase truck movements from eight (8) vehicles per hour entering and exiting the site to 24 vehicles per hour entering and exiting the site in the future.

3 The development

Macka’s Sand has sought approval for a modification to the approval to establish an alternative access route to the site, which will pass via a right of way from Nelson Bay Road to Lot 122 which adjoins the northern boundary of Lot 218 (Attachment A). GHD was engaged by Umwelt Australia Pty Ltd on behalf of Macka’s Sands to prepare a traffic study for the Macka’s Sand development modification (Attachment B).
4 Assessment by GHD and Roads and Maritime

GHD completed a traffic study, dated 3 July 2015 (Attachment B) to support Macka’s Sand in their application for the modification. The scope of this study included assessment of the existing traffic conditions and the performance of Nelson Bay Road, Richardson Road and Salt Ash Avenue roundabout and the site access intersection. In summary this indicated that these intersections operate at Level of Service (LoS) B or better in 2015 and 2035 considering different scenarios with and without additional heavy vehicle / b-double movements.

Roads and Maritime reviewed the information presented in the traffic study and provided a response to the Department of Planning and Environment (DPE) dated 15 September 2015 (Attachment C) which objected to any increase in truck movements in the AM peak period of 6 AM to 9 AM, however agreeing with proposed increases during the other periods. Roads and Maritime undertook a separate assessment using the VISSIM microsimulation modelling which suggested that LoS F would be achieved during the critical period. However, Kellee McGilvray, Manager Land Use Hunter would not provide any additional detail or a copy of the traffic model inputs to confirm the difference. When provided with a video of this assessment, the reported LoS was not demonstrated.

GHD undertook further microsimulation modelling of Nelson Bay Road in Macka’s Sand VISSIM Modelling Assessment, dated 5 November 2015 (Attachment D) to confirm the Roads and Maritime Results and tested two (2) scenarios including 2015 and 2035 with background traffic and eight (8) and 24 Macka’s trucks per hour exiting the site respectively. The microsimulation results generated by GHD indicate a minor increase in average vehicle delay and no change in overall LoS would occur as a result of increasing the number of Macka’s truck trips from 8 per hour to 24 per hour, accounting for 2035 background traffic.

5 Justification for increased movements

Umwelt, in support of the Macka’s Sand VISSIM Modelling Assessment, provided a response to Roads and Maritime dated 16 November 2015 (Attachment E). Feedback from clients and truck drivers showed the importance of trucks leaving the site between 5 AM and 7 AM. This feedback also showed that not being able to travel to and from the site during this period impacts business. A summary of responses is provided as an attachment to this letter, with additional letters of support provided at (Attachment F). In summary the feedback shows that there is:

- A shortage of fine sand to meet the demand of approximately one (1) million tonnes of fine sand for construction production alone, including NSW Government projects such as Northconnex, Westconnex, Sydney Metro, CBD and South Light Rail and other significant transport and infrastructure projects
- If Sand deliveries cannot leave Nelson Bay during the proposed restriction period, drivers will not be able to make two (2) return trips in a day, limiting supplies to construction projects.
- Driver licencing restrictions combined with peak hour traffic may impact businesses ability to undertake a second trip within the 12 to 14 hour driver hours as specified by Roads and Maritime
- Loading from 5 AM allows trucks to travel to Sydney and off load prior to the AM peak, therefore reducing in the impact on peak hour traffic.
Revised changes to truck movements were proposed by Umwelt based on responses from feedback and Roads and Maritime concerns (Attachment E).

6 Current Status
Roads and Maritime has considered the information presented in the letter dated 16 November from and provided a response to the DPE dated 10 December 2015 (Attachment G) which has allowed increased truck movements in the AM peak period of 5 AM to 6 AM to 48 per hour (24 in and 24 out).

7 Conclusion
GHD and Unwelt on behalf of Macka’s Sand have highlighted the importance of sand deliveries to support the economic growth in Sydney and the critical nature of the timing of these deliveries.

As a result, the following outcomes are sought on behalf of our client

1. That the General Manager Heavy Vehicles meet with the proponents of Macka’s Sand to understand the issues under consideration
2. That the General Manager Heavy Vehicles seek clarification from Roads and Maritime Services, Hunter for objection
3. That Roads and Maritime reconsider the objections on the basis of supporting economic activity while maintaining network safety and efficiency.

8 Contact Information
Should you require any further information or wish to discuss this further, you can contact either Peter Jamieson (Umwelt) or I directly.

Graham McCabe
Service Leader, Transport Optimisation and Planning
GHD Pty Ltd

Peter Jamieson
Director
Umwelt (Australia) Pty Ltd

Regards

Graham McCabe
18/12/15
Attachment A – Extract from *Environmental Assessment, Modifications to Mackas Sand – Extraction Operations on Lot 218 & 220 – Salt Ash NSW, October 2012*
03 July 2015

Peter Jamieson
Umwelt (Australia)

Dear Peter,

GHD was engaged by Umwelt Australia Pty Ltd to prepare a traffic study for the Macka’s Sand development.

Mackas Sand traffic study
Development traffic assessment

1 Overview

Nelson Bay Road is the main arterial link connecting Newcastle to Williamtown and the Tomaree Peninsula. It carries a large volume of local and tourist traffic visiting the Nelson Bay area. It is the only route servicing the Tomaree Peninsula and the various townships between Newcastle and Nelson Bay.

Macka’s Sand development proposes to increase truck movements from eight vehicles per hour entering and exiting the site to 24 vehicles per hour entering the site and 24 vehicles per hour exiting the site in the future. The traffic study evaluates the impacts on the Richardson Road and Nelson Bay roundabout and the Nelson Bay Road site access. Figure 1 provides an understanding of the site location and roads included in the study.

The scope of work for this study comprises the assessment of:

- The existing traffic conditions surrounding the site;
- The performance of Nelson Bay Road, Richardson Road and Salt Ash Avenue roundabout and the site access intersection under existing traffic conditions; and
- The performance of Nelson Bay Road, Richardson Road and Salt Ash Avenue roundabout and the site access intersection with additional heavy vehicles movements.
This traffic study has necessarily relied on a number of assumptions as follows:

- Data collection has been limited to peak hour traffic surveys provided by NTPE (Ron Brown) Consulting and average daily counts;
- Using AUSTROADS vehicle classification system. Instead of modelling light vehicles (vehicle classes 1 and 2) and heavy vehicles (vehicle classes 3 to 9) only, an additional vehicle class of large trucks was considered in the models to acknowledge different traffic behaviour of B-Doubles (vehicle class 10, 25 m long and 2.5 m wide) as this has been highlighted to be the type of vehicles provided in Mackas Sand Quarry MR108 Nelson Bay Road, Salt Ash, Cardno, 2014 drawing number 81014007-CI-10001, revision 2;
- Cycling movements across Nelson Bay Road were not modelled in this study;
- Traffic distribution assumes that large trucks arriving from the south will travel along Nelson Bay Road up to Richardson Road and Salt Ash Avenue roundabout, make a U-turn and continue on Nelson Bay Road towards the site access. No other large trucks were assumed to come from different directions than south;
- Traffic background growth is considered to be 1% according to MR 108 Nelson Bay Road Upgrade Cromarty Lane to Port Stephens Drive, Review of Environmental Factors, Roads and Maritime Services, 2012. The future scenario will consist of evaluating the increased heavy vehicle movements and background traffic growth by 2035;
- Nelson Bay Road and the site access intersection layout was based on Mackas Sand Quarry MR108 Nelson Bay Road, Salt Ash, Cardno, 2014 drawing number 81014007-CI-
10001, revision 2;

- Vehicle speeds of 60 km/h on Salt Ash Avenue departure and approach lanes. This was calculated given the peak hour period identified for this modelling exercise covers part of the school zone 40 km/h speed restrictions (i.e. from 8:00 to 8:30 in the AM peak and from 15:45 to 16:45 in the PM peak);
- Vehicle speeds of 80 km/h on remaining departure and approach lanes of Nelson Bay Road, Richardson Road and Nelson Bay Road; and
- SIDRA intersection and roundabouts were modelled as individual sites.

2 Daily and network peak hour traffic

This section provides an understanding of current traffic volumes on the road network surrounding the development site and the modelled future conditions given the assumptions outlined.

To understand the existing traffic conditions surrounding the site, two traffic surveys methods have been commissioned:

- Intersection turning movement surveys were carried out by NTPE, on Thursday, 28th of May 2015 between 7:00 and 9:00 in the AM peak and between 15:00 and 17:00 in the PM peak at the Nelson Bay Road, Richardson Road and Salt Ash Avenue roundabout. The results of the survey and network AM and PM peak periods are presented in Table 1 and a copy of the roundabout traffic survey data is provided as attached documentation.

Table 1 Existing traffic volumes – 28th May 2015

<table>
<thead>
<tr>
<th>Location</th>
<th>AM Peak Hour (7:30-8:30 am) (vph)*</th>
<th>PM Peak Hour (3:45-4:45 pm) (vph)*</th>
<th>Daily (vpd)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson Bay Road / Richardson Road Roundabout</td>
<td>2,104</td>
<td>2,286</td>
<td>21,040</td>
</tr>
</tbody>
</table>

Note: *(vph) = vehicles per hour;

**(vpd) = vehicles per day. The daily traffic volume for these roads has been estimated based on the assumption that the peak hour traffic flow is approximately 10% of the daily traffic volume.

- A seven day Automatic Traffic Count (ATC) was undertaken 50 m east of Samson Road between 28th May 2015 and 3rd June 2015 to gain an understanding of the existing daily volumes and 24 hour traffic profile. Figure 2 presents the daily traffic profile and Table 2 provides an understanding of the heavy vehicle ratio for the surveyed roundabout.
Figure 2 – Nelson Bay Rd traffic profile on weekdays and weekends, 50 m east of Sansom Rd

Weekday - 5 Days Average

Weekend - 2 Days Average

Table 2  Heavy vehicles proportions based on surveys on 28 May 2015

<table>
<thead>
<tr>
<th>Location</th>
<th>Vehicles per hour (vph)</th>
<th>HCV (vph)</th>
<th>HCV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM - Nelson Bay Road near Richardson Road</td>
<td>1,259</td>
<td>87</td>
<td>7%</td>
</tr>
<tr>
<td>PM - Nelson Bay Road near Richardson Road</td>
<td>1,274</td>
<td>75</td>
<td>6%</td>
</tr>
<tr>
<td>AM Nelson Bay Road near Sansom Road</td>
<td>1,185</td>
<td>83</td>
<td>7%</td>
</tr>
<tr>
<td>PM Nelson Bay Road near Sansom Road</td>
<td>1,224</td>
<td>71</td>
<td>6%</td>
</tr>
</tbody>
</table>

Note: HCV – heavy commercial vehicles.
3 Existing roundabout performance

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network. SIDRA intersection modelling software was used to assess the proposed peak hour operating performance of Nelson Bay Road, Richardson Road and Salt Ash Avenue roundabout and the site access. The criteria for evaluating the operational performance of intersections is provided by the RTA Guide to Traffic Generating Developments 2002 and reproduced in Table 3. This criteria for evaluating the operational performance of intersections is based on a qualitative measure (i.e. Level of Service), which is applied to each band of average vehicle delay.

**Table 3** Level of Service (LoS) criteria for intersections

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Delay per Vehicle (secs/veh)</th>
<th>Traffic Signals, Roundabouts</th>
<th>Give Way &amp; Stop Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt; 14</td>
<td>Good operation</td>
<td>Good operation</td>
</tr>
<tr>
<td>B</td>
<td>15 to 28</td>
<td>Good with acceptable delays &amp; spare capacity</td>
<td>Acceptable delays &amp; spare capacity</td>
</tr>
<tr>
<td>C</td>
<td>29 to 42</td>
<td>Satisfactory</td>
<td>Satisfactory, but accident study required</td>
</tr>
<tr>
<td>D</td>
<td>43 to 56</td>
<td>Operating near capacity</td>
<td>Near capacity &amp; accident study required</td>
</tr>
<tr>
<td>E</td>
<td>57 to 70</td>
<td>At capacity; at signals, incidents will cause excessive delays Roundabouts require other control modes</td>
<td>At capacity, requires other control mode</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 70</td>
<td>Over Capacity Unstable operation</td>
<td>Over Capacity Unstable operation</td>
</tr>
</tbody>
</table>

*Source: RTA Guide to Traffic Generating Developments (2002)*

*Notes: The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay. The level of service (LoS) for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.*

The 2015 traffic flows were analysed using SIDRA to obtain the existing operation of the roundabout. The results of the 2015 SIDRA assessment is summarised in Table 4. SIDRA outputs are also provided as attached documentation.

**Table 4** Existing performance with 2015 traffic volumes but no additional B-Doubles

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Priority Type</th>
<th>AM peak</th>
<th>PM peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LoS</td>
<td>Average Delay (s)</td>
</tr>
<tr>
<td>Nelson Bay Road</td>
<td>Roundabout</td>
<td>B</td>
<td>8</td>
</tr>
<tr>
<td>/Richardson Road</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nelson Bay Road</td>
<td>Give Way</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>/Site Access</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 indicates that the existing roundabout of Nelson Bay Road, Richardson Road and Salt Ash Avenue currently operates with spare capacity at LoS B in both the existing AM and PM peak periods, and B-double movements did not raise any issues within the roundabout. The intersection of Nelson bay Road and the site access indicates that the access operates satisfactorily with spare capacity in both the AM and PM peaks in 2015 under existing traffic conditions.
A 20% traffic growth has been added to the 2015 traffic flows to obtain an understanding of traffic conditions in 2035. Table 5 outlines the SIDRA results.

Table 5   Existing performance with 2035 traffic volumes but no additional B-Doubles

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Priority Type</th>
<th>AM peak</th>
<th>PM peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LoS</td>
<td>Average Delay (s)</td>
</tr>
<tr>
<td>Nelson Bay Road /Richardson Road</td>
<td>Roundabout</td>
<td>B</td>
<td>8</td>
</tr>
<tr>
<td>Nelson Bay Road /Site Access</td>
<td>Give Way</td>
<td>A</td>
<td>1</td>
</tr>
</tbody>
</table>

3.1   Roundabout performance under additional heavy vehicle traffic

An indication of the additional heavy vehicle traffic generation from the Macka's Sand site is assumed to be 24 vehicles travelling in and 24 vehicles travelling out of the site. A summary of the results and SIDRA outputs when modelling the roundabout with the additional heavy vehicle movements is provided in

Table 6 - Future performance with 2015 traffic volumes and additional B-Doubles

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Priority Type</th>
<th>AM peak</th>
<th>PM peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LoS</td>
<td>Average Delay (s)</td>
</tr>
<tr>
<td>Nelson Bay Road /Richardson Road</td>
<td>Roundabout</td>
<td>B</td>
<td>8</td>
</tr>
<tr>
<td>Nelson Bay Road /Site Access</td>
<td>Give Way</td>
<td>A</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7   Future performance with 2035 traffic volumes and additional B-Doubles

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Priority Type</th>
<th>AM peak</th>
<th>PM peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LoS</td>
<td>Average Delay (s)</td>
</tr>
<tr>
<td>Nelson Bay Road /Richardson Road</td>
<td>Roundabout</td>
<td>B</td>
<td>9</td>
</tr>
<tr>
<td>Nelson Bay Road /Site Access</td>
<td>Give Way</td>
<td>A</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 6 and Table 7 indicate that the existing roundabout of Nelson Bay Road, Richardson Road and Salt Ash Avenue will not be adversely impacted by the additional B-Double movements. The results indicate that the roundabout will continue to perform with spare capacity at LoS B in both the existing AM and PM peak hours for 2015 and 2035 years.

The analysis indicates that the site access in both 2015 and 2035 would continue to operate with spare capacity at LoS A.

In summary the existing road network analysed would continue to operate with minimal impact under the proposed conditions.
Kind Regards,

Stephen Jamieson
Senior Civil Engineer
Attachment C – Letter from Roads and Maritime to DPE, 15 September 2015
5 November 2015

Peter Jamieson
Umwelt (Australia)

Dear Peter

Mackas Sand
VISSIM Modelling Assessment

GHD has undertaken microsimulation modelling of Nelson Bay Road to assess the impact of proposed additional truck movements between 08:00 and 09:00 on weekdays, focusing on the performance of the Mackas Sand access intersection and the Richardson Road roundabout.

It is understood that all truck trips to and from the Mackas Sand site interact with Nelson Bay Rd west (in the direction of Newcastle). Since the access intersection is in a left in left out configuration, inbound vehicles are forced to perform a U-turn at the Richardson Road roundabout.

The model extents and the Mackas Sand truck movements are shown in Figure 1.

Figure 1 - VISSIM model extents and Mackas Sand truck movements (not to scale)
1 Base Model Development

1.1 Time period
An analysis period of 06:00 to 09:00 was used, preceded by a 15 minute “warm up” period to load the network with vehicles.

1.2 Network base
A combination of Google Earth Pro imagery and CAD was used as a background to construct the model network. Backgrounds were aligned and scaled manually. A final check resulted in less than 0.1% distance error between opposing corners of the model. The model area doesn’t appear to contain any significant road grade, and in the absence of data, it has been modelled as flat.

1.3 Traffic data
The traffic data available to GHD is as follows:

- Full classified turning movement counts at Nelson Bay Rd / Richardson Rd (Thursday 28 May 2015, 07:00 to 09:00, 15 minute reporting interval); and
- 7 day, bi-directional classified automatic tube count (ATC) on Nelson Bay Rd, 50 m east of Sansom Rd (28 May to 03 June inclusive, 1 hour interval)

A brief review of the ATC data reveals that weekday traffic in both direction between 06:00 and 09:00 is highly consistent throughout the week. This data is summarised in Table 1.

Table 1 - Automatic tube count totals from 6 am to 9 am, 50 m east of Sansom Rd

<table>
<thead>
<tr>
<th></th>
<th>Thu. (28/5)</th>
<th>Fri. (29/5)</th>
<th>Mon. (1/6)</th>
<th>Tue. (2/6)</th>
<th>Wed. (3/6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound</td>
<td>890</td>
<td>809</td>
<td>904</td>
<td>833</td>
<td>836</td>
</tr>
<tr>
<td>Westbound</td>
<td>2385</td>
<td>2195</td>
<td>2370</td>
<td>2488</td>
<td>2431</td>
</tr>
</tbody>
</table>

Given the lack of significant intersections or development between the two sites, the Nelson Bay Rd / Richardson Rd turning movements should reconcile well with the tube counts. This is confirmed by the data in Table 2.

Table 2 - Total traffic count from 7 am to 9 am (28/5)

<table>
<thead>
<tr>
<th>Direction</th>
<th>Automatic tube count (50 m east of Sansom Rd.)</th>
<th>Inferred from Nelson Bay Rd. / Richardson Rd. TM counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound</td>
<td>637</td>
<td>647</td>
</tr>
<tr>
<td>Westbound</td>
<td>1639</td>
<td>1672</td>
</tr>
</tbody>
</table>
1.4 Demands Development

For the period 07:00 to 09:00, light and heavy vehicle demands were adapted directly from the roundabout turning movement data. Intra-period profiling was preserved at a 15 minute resolution.

Since no turning movement count data is available between 06:00 and 07:00, demands for this period were estimated by scaling 07:00 to 08:00 volumes, proportional to the corresponding change in ATC volume.

For movements entering and exiting the western leg of the roundabout, volumes were scaled according to the eastbound and westbound ATC data respectively. For all other turning movements at the roundabout, volumes were scaled according to the overall (bi-directional) ATC volumes. Since no intra-period profile information exists for the 06:00 to 07:00 period, a flat profile has been assumed.

Prior to the analysis period, a model "warm-up" period (05:45 to 06:00) was simulated to prime the network with an appropriate number of vehicles. The demands for this period were estimated by the proportional scaling process described above.

Table 3 summarises the results of the demands development process.

Table 3 - Demands applied to the base model (total vehicles per hour)

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Eastbound ATC (vph)</th>
<th>Westbound ATC (vph)</th>
<th>Demand total (vph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>05:45 to 06:00</td>
<td>73</td>
<td>413</td>
<td>852*</td>
</tr>
<tr>
<td>06:00 to 07:00</td>
<td>253</td>
<td>746</td>
<td>1749*</td>
</tr>
<tr>
<td>07:00 to 08:00</td>
<td>295</td>
<td>890</td>
<td>2075</td>
</tr>
<tr>
<td>08:00 to 09:00</td>
<td>342</td>
<td>749</td>
<td>1829</td>
</tr>
</tbody>
</table>

* synthesised demands

1.5 Mackas Trucks

Based on information provided by Mackas Sand and Soil Supplies, a unique vehicle type has been defined to explicitly and conservatively model the trucks with power and gross mass attributes of 500 horsepower and 57 tonnes.

It is understood that there are currently eight trucks exiting and entering the site, per hour, for the 06:00 to 09:00 period. These movements have been applied to the base model in addition to the demands described in section 1.4.

1.6 Calibration and Validation

Given the small size and limited complexity of the model, a high standard of calibration has been easily achieved with every measured flow having a GEH statistic of less than two when compared with its counterpart in the model.
The general operation and queue lengths at the roundabout were observed and recorded by GHD staff on 22 October 2015 during a site visit in the AM peak period. Queue lengths on each leg were recorded at five minute intervals between 07:15 and 8:15. In general the roundabout was observed to be operating significantly under capacity in a free-flow state, with short queues of two to three vehicles forming occasionally. The maximum queue observed during the site visit was six vehicles across two lanes, on the Nelson Bay Rd west approach.

The observed behaviour of the roundabout is well represented in the model visualisation, and therefore the base model is considered to be validated and suitable for testing.

2 Scenario Test

2.1 Description

The scenario to be tested is an increase in Mackas truck movements from eight vehicles per hour entering and exiting the site currently, to 24 vehicles per hour entering and exiting the site, for a 20 year analysis horizon.

A 20 per cent increase in light and heavy vehicle demands has been applied to account for background traffic growth from 2015 to 2035 volumes.

2.2 Results

Average vehicle delay has been reported for each intersection, for both the 2015 base and 2035 scenario models. This refers to the average delay experienced by all vehicles traversing the intersection over a given time period.

The averaged results of five seed runs are contained in Table 4 and Table 5.

Table 4 - Average vehicle delay for Nelson Bay Rd./Richardson Rd.

<table>
<thead>
<tr>
<th>Model</th>
<th>6 am to 7 am</th>
<th>7 am to 8 am</th>
<th>8 am to 9 am</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay (s)</td>
<td>LoS</td>
<td>Delay (s)</td>
</tr>
<tr>
<td>2015 base (8 Mackas trucks per hour &amp; 2015 background traffic)</td>
<td>2.2 A</td>
<td>2.6 A</td>
<td>2.6 A</td>
</tr>
<tr>
<td>2035 scenario (24 Mackas trucks per hour &amp; 2035 background traffic)</td>
<td>3.1 A</td>
<td>4.0 A</td>
<td>3.7 A</td>
</tr>
</tbody>
</table>
Table 5 - Average delay per vehicle for Nelson Bay Rd/Mackas access

<table>
<thead>
<tr>
<th>Model</th>
<th>6 am to 7 am</th>
<th>7 am to 8 am</th>
<th>8 am to 9 am</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay (s)</td>
<td>LoS</td>
<td>Delay (s)</td>
</tr>
<tr>
<td>2015 base (8 Mackas trucks per hour &amp; 2015 background traffic)</td>
<td>1.1</td>
<td>A</td>
<td>1.2</td>
</tr>
<tr>
<td>2035 scenario (24 Mackas trucks per hour &amp; 2035 background traffic)</td>
<td>1.5</td>
<td>A</td>
<td>1.7</td>
</tr>
</tbody>
</table>

The results for both intersections in the model indicate a minor increase in average vehicle delay and no change in overall level of service would occur as a result of increasing the number of Mackas truck trips from 8 per hour to 24 per hour, accounting for 2035 background traffic.

Regards
GHD Pty Ltd

Hugh Klein
Traffic and Transport Engineer
5 November 2015

Peter Jamieson
Umwelt (Australia)

Dear Peter

Mackas Sand
VISSIM Modelling Assessment

GHD has undertaken microsimulation modelling of Nelson Bay Road to assess the impact of proposed additional truck movements between 08:00 and 09:00 on weekdays, focusing on the performance of the Mackas Sand access intersection and the Richardson Road roundabout.

It is understood that all truck trips to and from the Mackas Sand site interact with Nelson Bay Rd west (in the direction of Newcastle). Since the access intersection is in a left in left out configuration, inbound vehicles are forced to perform a U-turn at the Richardson Road roundabout.

The model extents and the Mackas Sand truck movements are shown in Figure 1.

Figure 1 - VISSIM model extents and Mackas Sand truck movements (not to scale)
1 Base Model Development

1.1 Time period
An analysis period of 06:00 to 09:00 was used, preceded by a 15 minute “warm up” period to load the network with vehicles.

1.2 Network base
A combination of Google Earth Pro imagery and CAD was used as a background to construct the model network. Backgrounds were aligned and scaled manually. A final check resulted in less than 0.1% distance error between opposing corners of the model. The model area doesn’t appear to contain any significant road grade, and in the absence of data, it has been modelled as flat.

1.3 Traffic data
The traffic data available to GHD is as follows:
- Full classified turning movement counts at Nelson Bay Rd / Richardson Rd (Thursday 28 May 2015, 07:00 to 09:00, 15 minute reporting interval); and
- 7 day, bi-directional classified automatic tube count (ATC) on Nelson Bay Rd, 50 m east of Sansom Rd (28 May to 03 June inclusive, 1 hour interval)

A brief review of the ATC data reveals that weekday traffic in both direction between 06:00 and 09:00 is highly consistent throughout the week. This data is summarised in Table 1.

Table 1 - Automatic tube count totals from 6 am to 9 am, 50 m east of Sansom Rd

<table>
<thead>
<tr>
<th></th>
<th>Thu. (28/5)</th>
<th>Fri. (29/5)</th>
<th>Mon. (1/6)</th>
<th>Tue. (2/6)</th>
<th>Wed. (3/6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound</td>
<td>890</td>
<td>809</td>
<td>904</td>
<td>833</td>
<td>836</td>
</tr>
<tr>
<td>Westbound</td>
<td>2385</td>
<td>2195</td>
<td>2370</td>
<td>2488</td>
<td>2431</td>
</tr>
</tbody>
</table>

Given the lack of significant intersections or development between the two sites, the Nelson Bay Rd / Richardson Rd turning movements should reconcile well with the tube counts. This is confirmed by the data in Table 2.

Table 2 - Total traffic count from 7 am to 9 am (28/5)

<table>
<thead>
<tr>
<th>Direction</th>
<th>Automatic tube count (50 m east of Sansom Rd.)</th>
<th>Inferred from Nelson Bay Rd. / Richardson Rd. TM counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound</td>
<td>637</td>
<td>647</td>
</tr>
<tr>
<td>Westbound</td>
<td>1639</td>
<td>1672</td>
</tr>
</tbody>
</table>

31/18455/11279
1.4 Demands Development

For the period 07:00 to 09:00, light and heavy vehicle demands were adapted directly from the roundabout turning movement data. Intra-period profiling was preserved at a 15 minute resolution.

Since no turning movement count data is available between 06:00 and 07:00, demands for this period were estimated by scaling 07:00 to 08:00 volumes, proportional to the corresponding change in ATC volume.

For movements entering and exiting the western leg of the roundabout, volumes were scaled according to the eastbound and westbound ATC data respectively. For all other turning movements at the roundabout, volumes were scaled according to the overall (bi-directional) ATC volumes. Since no intra-period profile information exists for the 06:00 to 07:00 period, a flat profile has been assumed.

Prior to the analysis period, a model “warm-up” period (05:45 to 06:00) was simulated to prime the network with an appropriate number of vehicles. The demands for this period were estimated by the proportional scaling process described above.

Table 3 summarises the results of the demands development process.

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Eastbound ATC (vph)</th>
<th>Westbound ATC (vph)</th>
<th>Demand total (vph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>05:45 to 06:00</td>
<td>73</td>
<td>413</td>
<td>852*</td>
</tr>
<tr>
<td>06:00 to 07:00</td>
<td>253</td>
<td>746</td>
<td>1749*</td>
</tr>
<tr>
<td>07:00 to 08:00</td>
<td>295</td>
<td>890</td>
<td>2075</td>
</tr>
<tr>
<td>08:00 to 09:00</td>
<td>342</td>
<td>749</td>
<td>1829</td>
</tr>
</tbody>
</table>

* synthesised demands

1.5 Mackas Trucks

Based on information provided by Mackas Sand and Soil Supplies, a unique vehicle type has been defined to explicitly and conservatively model the trucks with power and gross mass attributes of 500 horsepower and 57 tonnes.

It is understood that there are currently eight trucks exiting and entering the site, per hour, for the 06:00 to 09:00 period. These movements have been applied to the base model in addition to the demands described in section 1.4.

1.6 Calibration and Validation

Given the small size and limited complexity of the model, a high standard of calibration has been easily achieved with every measured flow having a GEH statistic of less than two when compared with its counterpart in the model.
The general operation and queue lengths at the roundabout were observed and recorded by GHD staff on 22 October 2015 during a site visit in the AM peak period. Queue lengths on each leg were recorded at five minute intervals between 07:15 and 8:15. In general the roundabout was observed to be operating significantly under capacity in a free-flow state, with short queues of two to three vehicles forming occasionally. The maximum queue observed during the site visit was six vehicles across two lanes, on the Nelson Bay Rd west approach.

The observed behaviour of the roundabout is well represented in the model visualisation, and therefore the base model is considered to be validated and suitable for testing.

2 Scenario Test

2.1 Description

The scenario to be tested is an increase in Mackas truck movements from eight vehicles per hour entering and exiting the site currently, to 24 vehicles per hour entering and exiting the site, for a 20 year analysis horizon.

A 20 per cent increase in light and heavy vehicle demands has been applied to account for background traffic growth from 2015 to 2035 volumes.

2.2 Results

Average vehicle delay has been reported for each intersection, for both the 2015 base and 2035 scenario models. This refers to the average delay experienced by all vehicles traversing the intersection over a given time period.

The averaged results of five seed runs are contained in Table 4 and Table 5.

Table 4 - Average vehicle delay for Nelson Bay Rd./Richardson Rd.

<table>
<thead>
<tr>
<th>Model</th>
<th>6 am to 7 am</th>
<th>7 am to 8 am</th>
<th>8 am to 9 am</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay (s)</td>
<td>LoS</td>
<td>Delay (s)</td>
</tr>
<tr>
<td>2015 base (8 Mackas trucks per hour &amp; 2015 background traffic)</td>
<td>2.2</td>
<td>A</td>
<td>2.6</td>
</tr>
<tr>
<td>2035 scenario (24 Mackas trucks per hour &amp; 2035 background traffic)</td>
<td>3.1</td>
<td>A</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Table 5 - Average delay per vehicle for Nelson Bay Rd/Mackas access

<table>
<thead>
<tr>
<th>Model</th>
<th>6 am to 7 am</th>
<th>7 am to 8 am</th>
<th>8 am to 9 am</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay (s)</td>
<td>LoS</td>
<td>Delay (s)</td>
</tr>
<tr>
<td>2015 base (8 Mackas trucks per hour &amp; 2015 background traffic)</td>
<td>1.1</td>
<td>A</td>
<td>1.2</td>
</tr>
<tr>
<td>2035 scenario (24 Mackas trucks per hour &amp; 2035 background traffic)</td>
<td>1.5</td>
<td>A</td>
<td>1.7</td>
</tr>
</tbody>
</table>

The results for both intersections in the model indicate a minor increase in average vehicle delay and no change in overall level of service would occur as a result of increasing the number of Mackas truck trips from 8 per hour to 24 per hour, accounting for 2035 background traffic.

Regards
GHD Pty Ltd

Hugh Klein
Traffic and Transport Engineer
Attachment E - Letter from Umwelt to Roads and Maritime, Hunter, 16 November 2015
16 November 2015

Kellee McGilvray
Land Use Assessment Manager - Hunter Region
Roads and Maritime Services

Dear Kellee,

Re: Mackas Sand – PA08_142 Mod 2

Further to our discussions and meeting on Thursday 12 November 2015, we provide the following additional information in regard to Mackas Sand’s proposed increase in truck movements.

1.0 VISSIM Modelling – Nelson Bay Road Williamtown

In the VISSIM model of Nelson Bay Road developed by GHD for Mackas Sand, actual traffic flows recorded at Paul’s Roundabout on Nelson Bay Road in May 2015 were used with the traffic volume increased by 120% for modelling purposes. Two videos were produced from the modelled data:

- **2035 AM scenario model_2xRT** – which shows recorded Nelson Bay Traffic (May 2015) increased to 120%. The modelling was done over a 3 hour peak period between 6 am and 9 am with 72 trucks entering and 72 trucks leaving the Mackas Sand quarry over the modelled three hour period. The duration of the video is 10 minutes (7.25 am to 7 35 am) with 6 trucks leaving and 5 trucks entering the quarry over this period which is the equivalent of 36 trucks leaving and 30 trucks entering the quarry per hour. In the first 1.5 minutes 4 trucks leave the quarry which is the equivalent of 160 trucks per hour leaving the quarry.

- **2035 AM scenario model - 200% mackas matrix_2xRT** - which shows recorded Nelson Bay Traffic (May 2015) increased to 120%. The modelling was done over a 3 hour peak period between 6 am and 9 am with 144 trucks entering and 144 trucks leaving the Mackas Sand quarry over the modelled three hour period. The duration of the video is 10 minutes (8.00 am to 8.10 am) with 11 trucks leaving and 5 trucks entering the quarry over this period which is the equivalent of 66 trucks leaving and 30 trucks entering the quarry per hour. In the first 2 minutes 5 trucks leave the quarry which is the equivalent of 150 trucks per hour leaving the quarry.

In the VISSIM model of Nelson Bay Road, every vehicle in the model has a desired forward safety distance that it attempts to maintain. This distance is calculated for each vehicle using a number of parameters lying on normal distributions, but nominally, for a vehicle travelling at 80kph, the desired safety distance will be 18.5m.

In the model, the merging vehicle (Mackas truck) will only enter the lane if there would be enough room for the trailing through vehicle (i.e. the vehicle travelling west on Nelson Bay Road) to maintain its desired safety distance without having to decelerate by more than the deceleration
By default, the deceleration limit varies between \(-1.0\text{m/s}^2\) and \(-3.0\text{m/s}^2\), depending on how far the truck is from the end of the merge.

By default, the deceleration limit decreases by \(1.0\text{m/s}^2\) for every 100m of distance from the end of the lane. Since our merging section is approximately 150m long, the trailing vehicle deceleration limit used in the truck’s decision making will vary from \(-1.5\text{m/s}^2\) immediately after the turn, to \(-3.0\text{m/s}^2\) at the downstream end.

2.0 Importance of trucks leaving the quarry between 5am to 7am weekdays

To better understand the importance of trucks leaving the quarry between 5 am and 7 am, Mackas Sand requested information from clients and truck drivers as to how not being able to get loads from the quarry would impact on their business and their lives.

The responses received to this request are provided as Attachment A which comprises a table of emails and short responses and letters where they have been provided. These responses can be grouped into four main reasons why being able to truck sand from Mackas Sand quarry at Lot 218 Williamtown between 5am and 7am in particular is important for construction industry, transport industry and drivers.

These reasons can be summarised as:

- **Shortage of alternate supplies of quality fine sand particularly for the Sydney market mean that greater access to fine sand at Lot 218 is important.** Sydney is currently using approximately 2 million tonnes of fine sand per year in concrete production alone. With the current level of housing development and the number of major infrastructure projects that have been commenced or are soon to commence, this demand is expected to continue for the foreseeable future (at least the next decade). This demand cannot be met using manufactured sand due to size and grading requirements. Penrith Lakes Scheme which has historically been one of the major sources of fine sand to the Sydney market closes in December 2015 and sand from Kurnell has limited supplies of sand that has deteriorated in quality of the last few years. Sydney Wide Building Material (see Attachment A) states that Mackas Sand and Soil has proven to be the only option for fine sand.

- **Concrete batching plants and landscape supplies need sand delivered before 7 am to enable them to meet market demands from the start of the day.** These facilities have limited space and limited stockpiling capacity and hence need sand delivered early so that they can ensure they can meet the product demands of their clients. Many building sites require concrete to be delivered from 7 am onwards. The efficiency of the construction industry relies on concrete and sand being reliably available from 7 am onwards. One of the major concrete producers in Sydney estimates that its operations require approximately 1500 tonnes of fine sand per day with approximately 40% of this being required between 7 am and 10 am meaning that for this client alone approximately 19 trucks of sand will need to be delivered to Lot 218 between 5 am and 7.30 am to enable it to meet the concrete demands of its construction industry clients alone. To meet the current Sydney demands for fine sand used in concrete alone, approximately 4 to 5 times this many trucks would be required over the same period (i.e. 7 am to 10 am). Supply of fine sand for other construction activities, landscape supplies and markets outside Sydney (i.e. Newcastle, Central Coast, Hunter Valley) require additional deliveries to this during this same time period.

- **If trucks leave the quarry later than approximately 7.00 am to supply the Sydney market, they get caught in peak hour traffic which:**
  - adds to the congestion in Sydney traffic,
  - adds to the time it takes drivers to deliver their loads,
• increases stress, frustration and fatigue levels for drivers and commuters alike,

• increases fuel and operating costs and greenhouse gas emissions, and

• generally adds to reduced efficiency in the overall transport system.

If trucks leave the quarry at around 5 am they can have the sand delivered to destinations in Sydney before peak hour. This enables them to get back to the quarry and collect and deliver their second load of sand and be off the road before afternoon peak hour.

• For the trucks to be economically viable they need to be able to do two trips per day. Driver’s hours are controlled. In simple terms, drivers are allowed to drive 12 hours per day in a 24 hour period. If they undertake special fatigue training they can drive up to 14 hours per day if they have a set break. If trucks delivering to Sydney get caught in peak hour traffic it increases travel time per round trip from approximately 5 hours to approximately 6.5 hours. As a result, leaving the much after 5 am and getting caught in Sydney peak hour can increase the length of the work day for the driver from approximately 11 hours to approximately 14+ hours. This has a significant impact on driver fatigue and on the family lives of the drivers who also need to be able to establish a work/life balance. It also contributes to congestion on Sydney roads, and risk and fatigue of other drivers and commuters.

3.0 Revised Changes Sought to Truck Movements

Taking into account:

• the strong indication from the responses received from Mackas Sand clients and truck drivers that the critical period for additional truck movements from the quarry is between 5 am and 7 am; and

• RMS’s concerns about potential impacts of additional truck movements during morning peak hour traffic in particular,

Mackas Sand has revised the changes to truck movements sought as set out in Table 1.1 of the EIS (Umwelt 2015) to the following:

<table>
<thead>
<tr>
<th>Transportation Period</th>
<th>Approved Truck Movements per hour (in plus out)</th>
<th>Proposed Truck Movements per hour (in plus out)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday to Friday Shoulder (5:00 am to 7:00 am)</td>
<td>10</td>
<td>48</td>
</tr>
<tr>
<td>Saturday Shoulder (5:00 am to 6:00 am)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Saturday Shoulder (6:00 am to 7:00 am)</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Monday to Friday 7:00 am to 9:00 am</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Monday to Friday (9:00 am to 10:00 pm)</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>Saturday (7:00 am to 4:00 pm)</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>Sundays and Public Holidays</td>
<td>$^{1}$</td>
<td>10</td>
</tr>
</tbody>
</table>

Note 1: Combined 10 truck movements (in plus out) from Lot 218 and Lot 220 (i.e. total of 10 truck movements (in plus out) per hour).
4.0 Mackas Sand Revised Commitments – Video Monitoring

To address community concerns about the times and manner that trucks accessing and leaving the quarry, Mackas Sand is committed to installing video cameras adjacent to Mackas Sand access road to monitor trucks entering and leaving the quarry. The cameras will be located in a fixed position with the field of view adjusted to only monitor truck movements onto and off the access road at the intersection. This commitment forms part of Mackas Sand Statement of Commitments for Mod 2.

If you would like any further information in regard to the VISSIM modelling, Responses received from clients and truck drivers, changes to modifications to traffic movements sought or Mackas Sand commitment to video trucks entering and leaving the site as discussed in this letter please contact either Robert Mackenzie on

Yours sincerely

Peter Jamieson
Director

enc
## Attachment A – Responses from Clients and Truck Drivers

<table>
<thead>
<tr>
<th>Client/Person Providing Response</th>
<th>Response received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darren Stocks Managing Director - ME Transport</td>
<td>See attached letter of 5 November 2015</td>
</tr>
<tr>
<td>John Jury – CEO Australian Fatigue Management</td>
<td>See attached letter of 5 November 2015</td>
</tr>
<tr>
<td>Robert Curmi – Resources Australia Transport</td>
<td>See attached letter</td>
</tr>
<tr>
<td>Colin Jackson – Director Rosebrook Sand &amp; Gravel</td>
<td>See letter attached dated 5 November 2015</td>
</tr>
<tr>
<td>Scott Stacey – Holcim</td>
<td>1500 t per day of which 40% required in Sydney between 7 am and 10 am meaning that trucks will need to leave quarry between 5 am and 7.30 am</td>
</tr>
<tr>
<td>Shane Hemers – Holcim</td>
<td>Loading before 7am enable customer timeslots through the day to be met and operator to manage fatigue</td>
</tr>
<tr>
<td>Chris Cromarty – Cromarty Haulage</td>
<td>Seeing as the quality of sand at Rocla in Sydney has deteriorated in the last few years, Mackas Sand And Soil has proven to be the only option. Starting at 5am means that we get the jump on peak hour traffic and means we are on the Freeway by 6 am if loaded earlier.</td>
</tr>
<tr>
<td>Carlos Andrade – Sydney Wide Building Materials</td>
<td>It would benefit us to be able to load before 7 am as to keep up with the daily production of our concrete plants</td>
</tr>
<tr>
<td>Mark Hall – MDH haulage</td>
<td>If I could not load before 7am I would not beat the peak hour traffic into Sydney, making my day longer with less deliveries</td>
</tr>
<tr>
<td>Geoff Single</td>
<td>If I wasn’t to get loaded before 7.00 am it would not allow me to get all my loads done for the day. Also builders want their deliveries on-site before 7.00 am.</td>
</tr>
<tr>
<td>Trevor Willcox – Building Products Supplies</td>
<td>As building Products Supplies which is a manufacturing plant and have day and night shifts, access to screen sand at Mackas Sand early in the mornings can play a big role in the plant’s production capacity</td>
</tr>
<tr>
<td>Rick Perret</td>
<td>Loading before 7 am allows us to start work at an earlier time allowing us to finish at a reasonable time</td>
</tr>
<tr>
<td>ME Transport</td>
<td>If I wasn’t to load before 7am I would not complete my work and would getting home to my family in the middle of the night</td>
</tr>
<tr>
<td>Darren Barry – ME Transport</td>
<td>Early start gets us off the road earlier</td>
</tr>
<tr>
<td>Paul Henderson – Hunter Quarries</td>
<td>If I need to load before 7.00 am so that the material is delivered to the customer before they start work. Concrete plants do not have large areas to stockpile material.</td>
</tr>
<tr>
<td>Tripodi</td>
<td>It is important to get away early so that we can get back for load before it is too late in afternoon</td>
</tr>
<tr>
<td>Louise Shipard – Tripodi Transport Pty Ltd</td>
<td>Tripodi Transport Pty Ltd require your opening hours to be 5 am in the morning, for the continuation of efficient business. As a Sydney based company, servicing Sydney based plants with your product, any changes to this opening hour would severely change our operations, along with that of our customers, including major Sydney concrete and construction plants.</td>
</tr>
<tr>
<td>BRL</td>
<td>It is important that we get out earlier so that we can beat the peak hour traffic in Sydney and cause less congestion</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Steve Hunt</td>
<td>If I can’t load before 7 am it means I will not get home until 7 pm. I have a family too. Please let me spend time with them</td>
</tr>
<tr>
<td>Darren McPherson</td>
<td>So I can deliver to customers on time</td>
</tr>
<tr>
<td>Damian Lancaster – Maddox Haulage</td>
<td>So I can make time slots allocated</td>
</tr>
<tr>
<td>ME Transport</td>
<td>We need to get loaded early so we can get home to our families early before the kids go to bed. We do not work office hours (9-5). Also if we start after 7am we are going into peak hour traffic on the roads at peak hour time</td>
</tr>
<tr>
<td>Russel Bezett – Metromix</td>
<td>As you know we have several of our Sydney based concrete plants reliant on your Newcastle sand product. It is crucial that you are able to meet the demands of these plants. Currently you supply upwards of 600 tonnes of this product daily and 90% of this supply is delivered between 4am and 9am. Our customers require that the majority of our concrete be supplied between 5am and 11am most days and any breakdown in this supply line would have detrimental effects on our ability to service their requirements.</td>
</tr>
<tr>
<td></td>
<td>As Transport supervisor for Metromix Concrete, I have grave reservations in relation to the continuity of materials being delivered if you are unable to load from 5am onwards each morning. As you would be aware our closest plant to your location is Hornsby which is a comfortable 2 hour trip. This plant can produce 90 metres of concrete in a matter of hours and on a 6am start with full bins we would be bordering on empty at 8am so at least 1 load of sand would be needed by 7.30am at the latest.</td>
</tr>
<tr>
<td></td>
<td>My greatest concern is for Seven Hills, Silverwater and by far the most critical is our Cromer plant with its limited storage.</td>
</tr>
<tr>
<td></td>
<td>On a busy day Cromer will require loads starting at 7am followed by every hour after that right up to midday. So a continuous flow of your product is absolutely crucial to most pours out of here.</td>
</tr>
<tr>
<td></td>
<td>Robert I cannot underestimate the importance of early loading from Newcastle and as we have seen in the past a simple breakdown on the freeway can bring traffic to a crawl putting our delivery timetable even further under pressure. I trust that by emphasising the importance of constant flow and continuity of delivery. You will see that my concerns are valid and sincere.</td>
</tr>
<tr>
<td></td>
<td>I trust this situation can be overcome and we can continue to enjoy a healthy working partnership.</td>
</tr>
<tr>
<td>Andrew Maddox – Maddox Haulage</td>
<td>Maddox Haulage regularly carts materials from Mackas sand and soil pit based at Williamtown.</td>
</tr>
<tr>
<td></td>
<td>Due to peak hour traffic throughout the Sydney area we are seeking to load trucks at times between 5:00am &amp; 7:00am. This request if granted would assist our business in providing quicker service to customers, quicker travel times &amp; assist with our log book hours.</td>
</tr>
<tr>
<td>Name</td>
<td>Message</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Mark Allen – Managing Director Select Quarry Products | As you are aware we have been awarded a long term contract transporting screen sand From Mackas to Sydney.  
I can’t stress enough the importance of the 5am starting time in order for us to service our customer’s demands.  
Due to their 24 hour production schedule and limited storage capacity this operating time has made a world of difference servicing our client.  
Additionally arriving in Sydney earlier has enabled us to manage our driver fatigue regulations with ease.  
With increased demand in Sydney for Mackas sand these operating hours are instrumental in being able to service customers and operating within NSW’s driver fatigue regulations. |
| Guy Martin – James Hardie Australia | James Hardy operates 24/7 and the earlier the deliveries can be received the better as the volumes can be managed. |
| Louie Papadakis – Director MBS Sand & Cement | Our transport fleet travels to Mackas Sand & Soil daily to collect sand and bring it back to our yard. Due to the long distance and time required for travel, it is imperative that Mackas Sand & Soil open early at 6 am. Our yard is located in Matraville in the Eastern Suburbs of Sydney. If the quarry is to open at 7am this would mean that our trucks are returning into Sydney in peak hour traffic. This is not beneficial for both the general public and our business. The more congestion the greater the possibility of an accident putting both the general public and our employees at greater risk. |
Attachment F – Supporting letters from Macka’s clients, November 2015
Mr Robert MacKenzie  
Maceea's Sand and Soil Supplies  

5 November, 2015

Robert,

Following our discussions this morning I wish to highlight the importance of retaining the 5am opening time for your Williamstown facility into the future.

Our industry is subject to the most stringent regulations surrounding driver fatigue. We are required to manage the health of our drivers as well as the scheduling of loads in a manner that has the least impact on a driver’s fatigue levels. The greatest source of stress for any truck driver is coping with the thoughtless actions of other road users, particularly highly manoeuvrable cars driven by people with little or no understanding of the times and distances required by large vehicles. One way of reducing this stress is to schedule loads early in the morning so that the drivers are able to avoid the stresses involved in driving in peak hour traffic when the vast majority of those with the least understanding of the needs of truck drivers take to the roads.

Our industry is constantly scrutinised by the general public, who as a rule have little understanding of how necessary a viable road transport industry is to providing them with the things that they take for granted on a daily basis. For example, to build new brick homes with concrete driveways and pathways. In order for them to achieve this wish, they must be able to obtain supplies of concrete to build the slabs, driveways and paths for their homes as well as the mortar to bind their bricks. The general public and the regulators need to understand that none of this is possible without a viable road transport industry.

We also have to face the reality of commercial viability. Each of our units that deliver your sand carries a capital cost of almost $500,000.00, an annual registration cost of almost $14,000.00, a driver cost of almost $100,000.00, a fuel cost of around $50,000.00 as well as tyres, maintenance etc. In order for an investment of such magnitude to remain viable, we need to maximise the time that the vehicles are safely earning an income and minimise the time that they are idle. Reducing the available loading hours by two hours per day will substantially increase the cost per tonne of the freight that we haul. This will inevitably lead to job losses or increased housing costs or both.

Whilst we understand the pressure that the regulators face from the vocal minority who may live near your operation, they need to understand that whilst a reduction in operating hours may improve the amenity of a few, such a decision will have huge detrimental effects on driver safety, jobs and, as everything that we buy is road freighted at some time, the cost of living to the general public.

We would encourage you to make every effort to convince the regulators of the necessity of maintaining the 5am opening time in the interests of the majority of those to be affected by their decision.

Darren Stocks

Managing Director
05 November, 2015

Robert Mackenzie  
Macka’s Sand & Soil Supplies

Dear Rob

RE: Earlier opening hours – transport hauling operations

Thank you for your information relating to changing you operating hours to 05:00 opening time.

After reviewing the driver scheduling times for both local and Sydney based drivers, I note the benefits of the earlier opening times below:

Primarily there are two major benefits to the drivers starting their operations at 05:00.

Reduced risk of driver fatigue due to the proposed hauling operations being outside of peak traffic times for the Sydney district, this will significantly shorten the travel times for drivers and enable them to maintain a 10 to 12 day. Under the current operating time, drivers will struggle to maintain their working day within Standard Hours, that being 12 hours work and driving per day. Operating during the peak traffic times presents an increased fatigue risk for your operations.

Secondly, the proposed opening time and driving schedule will improve public safety whereby your heavy vehicles will not be operating during peak traffic conditions. This is particularly important during the evening peak traffic hour/s where your drivers are operating under increased fatigue risk. Your proposed opening and operating hours retires your drivers and heavy vehicles from the public roads prior to the evening peak traffic, and demonstrates the correct level of risk management that many transport operators currently employ.

Further to this, drivers benefit from increased family time in the evenings, this is a good fit with current HR management policy relating to family friendly employment.
Please contact me should you wish further information on reducing your fatigue and operating risk.

Kindest regards

C.E.O
Australian Fatigue Management
B.Bus (Hons), Dip OHS, TAE 40110
Exemplar Global NHVA Auditor/Skills Assessor 12273
5th November 2015

Macka’s Sand & Soil
Email: [REDACTED]

To whom it may concern

RE: Early loading from Mackas Sand & Soil.

It is imperative that Rosebrook Sand & Gravel has the ability to load material from Mackas Sand & Soil from 5am due to the distances to be travelled by our transport fleet each day.

We frequently deliver material to Tamworth and Armidale as well as the Sydney Metropolitan area. If our transport fleet was unable to load until 7am from the quarry it would place those vehicles in the middle of Sydney peak hour traffic adding to congestion and reducing the efficiency of our fleet.

Rosebrook Sand & Gravel strongly supports the variation of consent for Mackas Sand & Soil.

Yours Sincerely,

[REDACTED]

Colin Jackson
Director
Rosebrook Sand & Gravel
5th November 2015

Macka’s Sand & Soil
Email: [redacted]

RE: Early loading from Mackas Sand & Soil

Our transport fleet travels to Mackas Sand & Soil daily to collect sand and bring it back to our yard. Due to the long distances and time required for travel it is imperative that Mackas Sand & Soil open early at 6am.

Our yard is located in Matraville in the Eastern suburbs of Sydney. If the quarry is to open at 7am this would mean that our trucks are retuning into Sydney in peak hour traffic. This is not beneficial for both the general public and our business. The more congestion the greater the possibility of an accident putting both the general public and our employees at greater risk.

MBS Sand & Cement strongly supports the variation of consent for Macka’s Sand & Soil.

Your sincerely,

[redacted]
Louie Papadakis
Director
MBS Sand & Cement
Dear Sir/Madam

We would like to advise that being able to load from 5am at mackas is so important to the viability of our company, if this was not able to happen this issue would cause a dramatic change with all our customers as well as my staff.

Our customers expect their orders first thing in the morning as they run out of sand and we are limited to amount of trucks we can send up their daily.

Our drivers will be affected dramatically as the new trading hours will cause them to be stuck in peak hour traffic as well as causing a massive delay in our everyday deliveries as they will need to start 2 hours later.

This will not be profitable to our company and I'm sure it will not be profitable to other company's also.
Please feel free to contact me if need on [redacted]

Thank you
Robert Curmi
Transport manager
Resources Australia Transport
Attachment G - Letter from Roads and Maritime, Hunter to DPE 10 December 2015
10 December 2015

CR2015/005514
SF2015/000805
KAP

Mining and Industry Projects
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Colin Phillips,

NELSON BAY ROAD (B63): SECTION 75W MODIFICATION OF ACCESS TO MACKA'S SAND PROJECT, LOT 218 DP 1044608 (08_0142 MOD 2)

Reference is made to traffic modelling and supporting information provided by proponent, Umwelt Australia Pty Ltd, on 18 November 2015 in response to comments provided by Roads and Maritime Services (Roads and Maritime) to the Department of Planning and Environment on 15 September and 15 October 2015 in accordance with Clause 16 of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

Roads and Maritime response

Roads and Maritime has reviewed the information provided including VIISIM traffic modelling and supporting documentation. It is noted that the proponent has sought to increase the number of heavy vehicle movements per hour between 5am to 7am from 28 (14 in / 14 out) and 16 (8 in / 8 out) respectively to 48 (24 in / 24 out) per hour.

Roads and Maritime maintains objection to any increase in truck movements during the AM peak traffic period of 6am to 9am due to the volume of southbound traffic and the limited opportunity for safe merge movements. An increase in truck movements outside this peak morning period may be supported, in accordance with recommendations made in Roads and Maritime’s correspondence dated 15 September 2015 provided below, including the proposed 48 traffic movements (24 in / 24 out) between 5am and 6am:
Transportation Period | RMS Supported Truck Movements per hour
--- | ---
5am to 6am | 48 (24 in / 24 out)
6am to 9am | 16 (8 in / 8 out)
9am to 10pm | 48 (24 in / 24 out)

Transportation Period | RMS Supported Truck Movements (per hour)
--- | ---
5am to 6am | No change requested
6am to 7am | 18 (9 in / 9 out)
7am to 4pm | 48 (24 in / 24 out)

Advice to the Department

Should the proponent seek to modify the proposed truck movements at a later date, Roads and Maritime is willing to undertake further assessment on receipt of additional information.

As noted in advice provided on 15 September 2015, Roads and Maritime, on behalf of Transport for NSW, are developing a Corridor Strategy for Nelson Bay Road. The purpose of the Corridor Strategy is to make planning and investment decisions transparent to the community, councils and other government agencies. The strategy, a draft of which is planned to be finalised mid-2016, will set out the NSW Government’s 20 year plan to manage and guide the development of Nelson Bay Road to improve safety, traffic efficiency and sustainability. An opportunity will be available for the community to provide feedback on the draft corridor strategy.

On the Ministers determination of this matter, please forward a copy of the Project approval to Roads and Maritime for record and / or action purposes. Should you require further information please contact Martin Jenkins on 4924 0267 or by email at development.hunter@rms.nsw.gov.au.

Yours sincerely

Kevin Webster
Manager Network and Safety
Hunter Region