

24th January 2011

Catherine Hill Bay Progress Association
c/o Sue Whyte and Ian Richmond
Via e-mail: suewhyte.1980@bigpond.com
richoconsult@m2data.com.au
ianandmarg1@optusnet.com.au
richoconsult@optusnet.com.au

Our Ref: *Catherine Hill Bay_traffic advice 5*

Attention: Sue Whyte / Ian Richmond

Dear Sue / Ian,

PROPOSED CATHERINE HILL BAY DEVELOPMENTS
Traffic Assessment Advice: Update No.5

As requested by the Catherine Hill Bay Progress Association (under instruction from Sue Whyte and Ian Richmond), *Samsa Consulting* has updated previous traffic assessment reviews of the impacts of two proposed residential village developments at Catherine Hill Bay (CHB), located on the NSW Central Coast.

Two major development areas have been proposed. The first development area is a Rose Group project and is located largely within the sites of Moonee Colliery, Wallarah Colliery and their associated land. The second development area is a Coal & Allied project located in the Middle Camp area, to the north of CHB.

The focus of this review is on the Catherine Hill Bay area in general and the potential impacts on it from the proposed Rose Group and Coal & Allied developments. The main objectives of the review are to:

- Critically assess the updated traffic assessment reports prepared as part of Rose Group and Coal & Allied development applications.
- Identify any additional traffic-related impacts and/or issues that may occur due to either or the combination of the proposed developments.

Previous reviews by *Samsa Consulting* were undertaken in February 2007, October 2007, February 2008 and October 2008 which assessed, amongst other documents, traffic assessment reports prepared as part of the Rose Group development application. Ongoing discussions have been held with a number of members of the Catherine Hill Bay Progress Association and local Catherine Hill Bay residents as part of this review process. This review has been carried out with reference to the following documents:

- ADW Johnson "*Catherine Hill Bay Environmental Assessment Report*", undated
- Asquith & deWitt "*Environmental Assessment Report – Catherine Hill Bay/Gwandalan Concept Plan*", August 2007

Samsa Consulting Pty Ltd

46 Riverside Drive, Sandringham, NSW 2219, AUSTRALIA
Phone: (+61) 414 971 956 or (+612) 9583 2225
E-mail: alansamsa@telstra.com • Web: www.samsaconsulting.com

- Coal & Allied "*Coal & Allied Lower Hunter Lands: Conservation and Development – Southern Estates Charette Report*", 30 August 2007
- Conybeare Morrison International "*Environmental Assessment Accompanying Project Application for The Moonee Hamlets, Catherine Hill Bay, NSW: Hamlet 1 – Proposed Residential Houses, Shop-Top Residences and Retail Accommodation*", 28/08/2007
- Conybeare Morrison International "*Environmental Assessment Accompanying Project Application for The Moonee Hamlets, Catherine Hill Bay, NSW: Hamlet 2 – Proposed Residential Houses*", 28/08/2007
- Conybeare Morrison International + Context Landscape Design "*Catherine Hill Bay and Gwandalan Concept Plan*", August 2007
- Halcrow "*Proposed Residential Subdivision at Catherine Hill Bay: Transport Report*", 16 November 2010
- Hunter Regional Development Committee "*Meeting minutes from 24th October 2007*", letter dated 13th December 2007
- Hyder "*Coal & Allied Industries Limited Lower Hunter Lands Project – Catherine Hill Bay (Middle Camp): Traffic and Transport*", October 2010
- Masson Wilson Twiney (MWT) "*Proposed Moonee Hamlets Development, Catherine Hill Bay: Transport Report*", 6 August 2007
- MWT "*Catherine Hill Bay Access Options: Traffic Report (Appendix B of Proposed Moonee Hamlets Development, Catherine Hill Bay: Transport Report)*", 8 December 2006
- Parsons Brinckerhoff "*Lower Hunter Land Development: Southern Estate – Catherine Hill Bay (Middle Camp), Traffic and Transport*", November 2007
- Parsons Brinckerhoff "*Environmental Assessment Accompanying Project Application for Proposed Civil and Site Preparation Works, Community and Landscape Works: The Moonee Hamlets*", undated
- Planning NSW "*Concept Approval: Determination of Catherine Hill Bay and Gwandalan – Concept Plan (MP 06_0330)*", 2nd September 2008
- Planning NSW "*Catherine Hill Bay and Gwandalan Residential Development – Concept Plan (06_0330) and Project Application (MP07_0107): Director General's Environmental Assessment Report*", August 2008
- Planning NSW "*Director-General's Requirements*", 30 November 2010
- Rose Group "*Catherine Hill Bay/Gwandalan Concept Plan: Statement of Commitments*", 6th December 2007
- Urbis "*Catherine Hill Bay: Concept Plan*", November 2007

ASSESSMENT ISSUES

A number of traffic-related issues are evident, as described following.

Local Road Network

1. There would need to be traffic management measures to ensure that through traffic from Montefiore Street does not travel via Clarke and Lindsley Streets but via Hale Street and then Flowers Drive. The assessment does not provide any evidence of suitable traffic management measures to protect the existing local street network.
2. It is not clear how traffic arriving from the north (via Pacific Highway) to access Catherine Hill Bay would be discouraged from using Flowers Drive and/or encouraged to use Montefiore Street. This issue is particularly pertinent if the Coal & Allied development proceeds at Middle Camp. Flowers Drive is likely to experience a significant increase in traffic flows and it is not clear whether current road conditions on Flowers Drive (eg. pavement, road width, traffic controls) would be satisfactory.

It should be noted that there is no capacity to widen the current Flowers Drive road reserve through the Middle Camp village area because most dwellings are built to their front boundary and, in some instances, driveway grades already exceed suitable gradients.

It is understood that Montefiore Street is to be upgraded to provide a 3.5 m wide travel lane and 2.0 m wide shoulder in both directions. It is assumed that it would have an 80 km/h speed limit.

3. Given the size of the proposed Rose Group and Coal & Allied developments and the associated traffic impacts either of them would cause, the developments should not proceed without suitable traffic mitigation measures.

As a minimum, the future road network needs to protect the existing local villages. A potential impact mitigation measure would be to provide a road network that is independent of the existing Middle Camp and Main Camp areas. This would allow Flowers Drive to serve as an alternative local road route only. However, great care would need to be taken when designing such a network to avoid any environmental impacts (refer to Environmental and Heritage Reports).

Access to the beach has also not been adequately addressed in a manner that mitigates negative impacts on Flowers Drive and Northwood Road. Access to Moonie Beach is poor with only one road access to the track and no parking.

Local Environmental Road Capacity

4. Both the Hyder and Halcrow reports have focussed on higher level access to Pacific Highway from the CHB area, and not on the lower level access (local street network) within CHB itself. It

is considered the local street network would have significant impacts from the proposed developments, particularly with respect to exceeding local road environmental capacity.

5. Both Hyder and Halcrow reports characterise Flowers Drive as a collector road with respect to environmental capacity criteria. While this may be the case for Flowers Drive between Pacific Highway and Middle Camp village, through the village, Flowers Drive is a local street with narrow road reserve and limited cul-de-sac streets running off it. Environmental capacity criteria in this case should be for a local street not an urban collector road as is the general intent of RTA's environmental capacity guidelines. The difference between local street criteria (maximum 200 to 300 vehicles per hour) against collector street criteria (maximum 300 to 500 vehicles per hour) is significant in this case, particularly during peak periods through the year and even more so during summer peak periods, eg. beach days.

Moreover, environmental capacity is partly subjective in that the environmental expectations of residents vary significantly. To paraphrase from RTA's *"Guide to Traffic Generating Developments"*, *"environmental capacity is best estimated by considering a range of differing perceptions and attitudes to traffic impacts in a particular area"*. For a quiet village area such as Middle Camp with normally very low traffic volumes, environmental capacity expectations are likely to be significantly less than for a suburban Sydney street for example, where traffic volumes are higher and more sustained. Hence, the adoption of collector road criteria for Flower's Drive environmental road capacity is considered to be incorrect, particularly along its section through the Middle Camp village area.

Traffic Generation

6. There is significant inconsistency between the Hyder and Halcrow reports with respect to future traffic flows when both developments are operational. This would result in inconsistent and/or incorrect impact assessment results – refer to Table 4.1 in the Halcrow report and Figure 3.3 in the Hyder report. This highlights the need for a consolidated report for the whole area identifying all possible cumulative traffic generation.
7. The Hyder report uses surveys undertaken during July 2007 (winter) and then factors in 10% additional traffic to take into account seasonal summer holiday traffic. The 10% increase is based on nearby Pacific Highway seasonal variations. It is inaccurate to assume that Catherine Hill Bay traffic flows during the summer period mimic those of Pacific Highway. Anecdotal evidence suggests that summer traffic flows in Catherine Hill Bay and along Flowers Drive are significantly greater than the 10% increase assumed.
8. Both the Hyder and Halcrow reports have based their impact assessment on traffic flow peaks that may not be worst case scenarios. For example, weekend traffic flows along Flowers Drive have been shown to be anywhere between 60% and 73% higher (refer Table 2.9 in Hyder report) to approximately 30% higher (refer Table 2.9 in Hyder report) than those on weekdays depending on which report is interpreted.
9. In evaluating traffic generation, all traffic in the area should be considered. This includes both the Coal & Allied and Rose development proposals as well as other developments in the general area – understood to be at least 15,000 people in new developments in Catherine Hill Bay, Nords Wharf, Gwandalan, Murrays Beach, Warnervale and Munmorah. Catherine Hill Bay will likely be the main beachside attraction to these new residents and consequently, weekend traffic in particular is likely to increase significantly.
10. In *Section 4.1* of the Halcrow report, an average trip generation rate of 0.65 vehicle trips per dwelling was used for weekday peak hour traffic generation, when the guideline rate from RTA's "*Guide to Traffic Generating Developments*" is 0.85 vehicle trips per dwelling for 'dwelling houses'. The lower traffic generation rate has the effect of reducing traffic generation numbers and hence, potential traffic-related impacts derived by the Halcrow report, eg. for the proposed 556 dwellings, the Halcrow report calculated that the trip generation would be 362 vehicles per hour (vph) during the peak period, however, the trip generation would be 473 vph if the 0.85 trip generation rate was used. The report justified the lower traffic generation rate because it "*reflects an expectation that because of the location of the site, a significant number of trips generated by the dwellings will be purpose ones made away from the area. The absence of major shops or similar facilities in the area would encourage residents to be more*

efficient in the travel habits". This justification is subjective and needs to be substantiated with traffic generation survey data from a comparable development for the lower traffic generation rate to be legitimate and applicable to the subject development.

Moreover, the Hyder report for the Coal & Allied development also used RTA traffic generation rates. It should be noted that these RTA rates are general in nature and the surveys upon which they are based are typically "*conducted in areas where new residential subdivisions are being built. . . . With new subdivisions, where standard lots are given, some additional allowance may be made for dual occupancy and group homes, where there are sufficient numbers of these types of residences*". There has not been any sensitivity or 'worst-case' scenario provided for traffic generation from each of the developments with the result that traffic generation may have been under-estimated and traffic-related impacts reduced.

Intersection Modelling

11. In the Hyder report, it is unclear why the results of intersection modelling for the Montefiore Street / Pacific Highway intersection have remained the same for the base case scenario (Table 3.3) and the Coal & Allied Middle Camp development scenario (Table 3.4) when there has been an increase in traffic volumes through the intersection.

Pacific Highway Access

12. Development should not be considered until road network and associated traffic management issues have been resolved. This includes the timing of Pacific Highway intersection upgrades and when they would occur with respect to the staging of proposed development in the area.
13. The Hyder report states that there is suitable northbound sight distance along Pacific Highway to sight any highway U-turn movements at the Nords Wharf Road intersection (refer page 44). Available northbound sight distance on the highway is only approximately 140 m but some 180 m is required to achieve safe intersection sight distance (SISD) at this location taking into account the slight upgrade. Therefore, the premise that U-turns are appropriate and safe at this location is not substantiated.

Beach Parking & Access

14. The issue of beach parking and access at both ends of the beach have not been suitably addressed. There has been no resolution of parking space numbers and the potential effects that this additional public parking may have on traffic generation to/from beach areas and through the existing villages of CHB and Middle Camp. The effects due to the increased demand from a larger residential population and visitors to the area are considered to be

significant. In particular, for the Middle Camp area, beach parking and access would affect Northwood Road, which is currently an extremely low volume local access street.

Public Transport

15. There is insufficient resolution of public transport (bus) services that are proposed to cater for the new developments, with only basic detail on the permeability and circulation of public transport (buses), particularly for the Coal & Allied Middle Camp development.

Street Frontage

16. As previously noted, with few exceptions there are no street frontage setbacks in the existing Main Camp and Middle Camp village areas of Catherine Hill Bay, ie. Clarke Street, Hale Street, Flowers Drive, Northwood Road. When traffic volumes increase, this has the potential to significantly increase impacts pertaining to road safety, amenity and noise, especially if the road network does not bypass these sensitive areas.

Pedestrians & Cyclists

17. It is noted that pedestrians currently walk along the Flowers Drive carriageway. Due to topographic site conditions and heritage attributes, the introduction of footpaths along Flowers Drive would be problematic, if at all possible. Through the introduction of traffic calming devices or other means, the speed limit for traffic along Flowers Drive should be significantly reduced to create a 'shared zone' to ensure provide pedestrian and cyclist safety.

SUMMARY

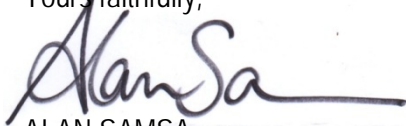
In summary, the following pertinent issues have arisen from this updated traffic assessment review:

- Traffic management measures are required to ensure that through traffic from Montefiore Street does not travel via Clarke/Lindsley Streets but via Hale Street and then Flowers Drive.
- It is not clear how traffic arriving from the north (via Pacific Highway) to access Catherine Hill Bay would be discouraged from using Flowers Drive and/or encouraged to use Montefiore Street. This issue is particularly pertinent if the Coal & Allied development proceeds at Middle Camp, resulting in increased traffic flows along Flowers Drive.
- Both the Hyder and Halcrow reports have focussed on higher level access to Pacific Highway from the CHB area, and not on the lower level access (local street network) within CHB itself. As a minimum, the future road network needs to protect the existing local villages to protect local streets, such as Flowers Drive and Northwood Road, by quarantining them from the proposed development through traffic wishing to access the beach, Main Camp or Montefiore Street.
- Both Hyder and Halcrow reports incorrectly characterise Flowers Drive as a collector road with respect to environmental capacity criteria.
- There is significant inconsistency between the Hyder and Halcrow reports with respect to future traffic flows when both developments are operational.
- Hyder factors in 10% additional traffic to take into account seasonal summer holiday traffic, which is inaccurately based on nearby Pacific Highway seasonal variations.
- Both the Hyder and Halcrow reports have based their impact assessment on traffic flow peaks that may not be worst case scenarios, ie. weekday peak periods rather than weekend peak periods during summer holidays.
- The use of a lower trip generation rate for the proposed Rose Group development needs to be substantiated for it to be legitimate and applicable for the traffic assessment.
- Development should not be considered until the timing of Pacific Highway intersection upgrades is clear.
- There is sub-standard northbound sight distance along Pacific Highway to sight any highway U-turn movements at the Nords Wharf Road intersection, which may arise from the proposed intersection arrangement for Flowers Drive / Pacific Highway.
- The extent and impact of public parking for the proposed developments and the beach areas has not been fully addressed.

- There is insufficient resolution of public transport services that are proposed to cater for the new developments.
- Because of the lack of street frontage setbacks in the existing village areas, increased traffic is likely to have a detrimental impact on road safety, amenity and noise impacts, especially if the new road network does not bypass these sensitive areas.
- Within the Middle Camp village, due to the absence of footpaths and 'built to boundary' conditions, traffic speed along Flowers Drive must be significantly reduced with recommended operation as a 'shared zone' to ensure pedestrian safety and preserve residential amenity.

If you have any queries, please contact the undersigned on 0414 971 956.

Yours faithfully,



ALAN SAMSA

Member Institution of Engineers Australia (MIEAust)

Chartered Professional Engineer (IEAust): NPER (1151361)

Fellow, Australian Institute of Traffic Planning & Management (FAITPM)

Certified Transport Planner

Member Institute of Transportation Engineers (ITE)

RTA Accredited Lead Road Safety Auditor (Level 3)