

Appendix 7

Traffic and parking review

Prepared by Steve King – Consultant Architect UNSW

Our Ref: 13S1209202

18 September 2014

East Quarter Hurstville Pty Limited
Suite 1101, 99 Forest Road
HURSTVILLE NSW 2220

Attention: Mr Andrew Young

Dear Andrew

RE: EAST QUARTER STAGE 3 PLANNING PROPOSAL – TRAFFIC AND PARKING REVIEW

As requested, please find herein our preliminary review of the potential traffic and parking effects relating to a Planning Proposal for the East Quarter development site. This letter provides a summary of the findings of the preliminary review. Attachment 1 contained in this letter provides a full report of the preliminary review. It is noted that a more detailed traffic and parking assessment will be completed at the DA stage of the project.

The planning proposal now seeks to increase the density for Stage 3 development. It is proposed for Stage 3 development to provide approximately 379 residential apartments (an increase of 102 apartments over the original approval) and some 4,765m² of retail uses (an increase of 4,116m² of retail floor area over the original approval).

The proposed increased in density for Stage 3 is likely to result in an overall development traffic of approximately 315 vph and 726 vph during the morning and evening peak periods respectively. This is an increase of approximately 86 vph during the busiest peak period over the original approval.

This level of additional traffic is considered to be acceptable in terms of overall traffic impact, however the Forest Road-Durham Street intersection would need to be upgraded to operate under signal control.

A more thorough traffic examination can be carried out at the DA stage once the exact detail of the development has been understood.

In relation to required onsite parking provision, a preliminary review of the proposed car park layout indicates that the above car parking requirements for Stage 3 could be accommodated on site.

It is also proposed to vary the parking provision rate for residential visitor parking from one space per four units to one space per six units. Council has previously indicated support for this.

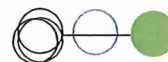
Overall, the traffic and parking effects of the proposed Stage 3 development would be satisfactory.

25 YEARS

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We trust the above is of assistance. Naturally, should you have any questions or require any further information, please do not hesitate to contact the undersigned on 8448 1800.

Yours sincerely

GTA CONSULTANTS

Michael Lee
Associate

ATTACHMENT 1

Preliminary Traffic and Parking Review Traffic Statement

25 YEARS

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Site Description

The development site is located at 93 Forest Road, Hurstville. The site is bounded by Forest Road and Durham Street to the north, Jack Brabham Drive to the east and south, and Hill Street and PJ Road to the west.

The subject site is located approximately mid-way between Hurstville and Allawah Railway Stations. The site is located within approximately 750m walking distance to Hurstville Railway Station and 500m walking distance to Allawah Railway Station.

Hurstville is also accessible using bus services. The Hurstville Transport Interchange not only interchanges heavy rail services with bus services, it also links Hurstville to other major centres such as Burwood, Kogarah, Macquarie Park and Parramatta and the surrounding local suburbs.

Hurstville City Centre TMAP Study

Hurstville City Council has prepared a Transport Management and Accessibility Plan (TMAP) to achieve Council's planning objectives and aspirations contained within their draft Hurstville City Centre local environmental plan (DHCCLEP).

In summary, the TMAP has recommended the following works in the vicinity of the East Quarter site:

- upgrade of Lily Street rail overpass
- additional peak hour traffic lanes along Forest Road between The Avenue and Lily Street, and
- intersection upgrade at Railway Parade with Lily Street.

Approved Development

The site has been granted approval for a mixed use development in June 2004 by Hurstville City Council. The approved development was proposed to be developed over three stages. Stage 1 was completed in April 2009 and Stage 2 was completed in December 2013. Stage 3 of the development of the original consent has yet to be acted upon.

A number of Section 96 applications were submitted to amend the original approval. The current approved number of residential apartments and non-residential floor space areas are summarised in Table 1.

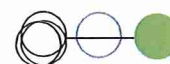
Table 1: Current East Quarter Approved Development

Development Stage	Residential Apartments	Retail Floor Area (m ²)	Commercial Floor Area (m ²)	Child Care Centre (m ²)
Stage 1	168	739	93	-
Stage 2	303	1,853	500	-
Stage 3	277	649	131	650
Total	748	3,241	724	650

Note: Stages 1 and 2 complete and occupied.

Previous Traffic Assessment

In 2004, Jacana Consulting examined the traffic and parking effects of the original approved development (as part of the DA traffic assessment). The approved development relates to the following land uses:



- 713 residential units
- 2,862m² of retail area
- 4,670m² of commercial area
- 2,370m² of gymnasium use, and
- 650m² of child care centre.

The adopted traffic generation rates in the original traffic assessments are shown in Table 2.

Table 2 Traffic Generation Rates (Adopted in Original DA Traffic Assessment)

Peak Period	Morning Peak Period	Evening Peak Period
Residential Units	0.29 trips per unit	0.29 trips per unit
Retail (Specialty Shops)	1.0 trips per 100m ²	4.6 trips per 100m ²
Commercial	2.0 trips per 100m ²	2.0 trips per 100m ²

The overall estimated development traffic arising from the original proposed development (as documented in the Jacana report) would be approximately 456 vph and 640 vph during the morning and evening peak periods respectively.

Proposed Stage 3 Development

A planning proposal for Stage 3 at East Quarter is being prepared. The Stage 3 development would continue to accommodate residential apartments, but no longer contemplates commercial use nor is a childcare centre being proposed.

It is now proposed to provide approximately 379 residential apartments (an increase of 102 apartments over the original approval) and some 4,765m² of retail uses (an increase of 4,116m² of retail floor area over the original approval). At this stage, the retail uses would comprise a number of specialty retail shops to be anchored by a supermarket (approximately 3,645m²). Table 3 presents the proposed development amendments for which approval is now sought in a new development application.

Table 3: East Quarter Proposed Amended Development

Development Stage	Residential Apartments	Retail Floor Area (m ²)	Commercial Floor Area (m ²)	Child Care Centre (m ²)
Stage 1 (Complete)	168	739	93	-
Stage 2 (Complete)	303	1,853	500	-
Stage 3 (Amended)	379 (+102)	4,765 (+4,116)	0 (-131)	0 (-650)
Total	859 (+102)	7,357 (+4,116)	593 (-131)	0 (-650)

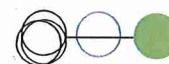
Note: Stages 1 and 2 are now complete and occupied.

Stage 3 development would continue to be accommodated in two separate buildings, namely Building F and Building X consistent with the original approval.

Traffic Effects

RMS (Roads and Maritime Services, formerly RTA) has released a Technical Direction (TDT2013/04) providing a summary of trip generation rates for various land uses to replace the suggested trip rates in their *Guide to Traffic Generating Developments, 2002*. Traffic generation rates for retail uses are as per the 2002 guidelines as RMS has not released updated rates for retail uses.

Therefore, the relevant traffic generation rates adopted in this preliminary traffic assessment are as follows:



- 0.19 and 0.15 trips per peak hour per apartment for high density residential developments during the morning and evening peak periods respectively
- 1.6 and 1.2 trips per peak hour per 100m² of commercial office developments during the morning and evening peak periods respectively
- 0.26 and 1.02 trips per hour per car space provided for retail shops during the morning and evening peak periods respectively, and
- 0.92 and 3.69 trips per hour per car space provided for the supermarket use during the morning and evening peak periods respectively.

On this basis, applying the above traffic generation rates to the proposed development presented in Table 3, the proposed East Quarter development (all stages) would have overall development traffic of 315 vph and 726 vph during the morning and evening peak periods respectively.

Given that the expected development traffic arising from the revised development scheme for Stage 3 would result in additional development traffic, intersection capacity analysis has been conducted for two nearby intersections along Durham Street with Forest Road and Lily Street plus the proposed access intersection on Durham Street. The other city centre intersections have already been assessed in the TMAP and as such these are not considered any further in this assessment.

The analysis results for the existing traffic conditions are presented in Table 4.

Table 4: Existing Condition Analysis Results

Intersection	Intersection Type	Morning Peak Period		Evening Peak Period	
		Average Delays (s)	LoS	Average Delays (s)	LoS
Forest Rd-Durham St	Priority	17	B	40	C
Durham St-Lily St	Signals	18	D	16	B

Note: RMS uses level of service as a measure to indicate the operating efficiency of a given intersection. The level of service ranges from A to F. Levels of service between A and D indicate the intersection is operating within capacity with LoS A providing exceptionally good performance to LoS D indicating satisfactory performance. LoS E and F indicate the intersection is operating at or near capacity and would require intersection improvement works to maintain reasonable performance. The long term desirable level of service is LoS D.

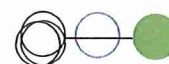
The analysis indicates that the two nearby assessed intersections operate satisfactorily under existing conditions.

The analysis was repeated for future conditions assuming that the Forest Road-Durham Street intersection would continue to operate under priority control as it presently does. The results are presented in Table 5.

Table 5: Future Condition Analysis Results – No Intersection Upgrade

Intersection	Intersection Type	Morning Peak Period		Evening Peak Period	
		Average Delays (s)	LoS	Average Delays (s)	LoS
Forest Rd-Durham St	Priority	22	B	265	F
Durham St-Lily St	Signals	42	C	27	B
Durham St Access	Priority	16	B	40	C

Note: RMS uses level of service as a measure to indicate the operating efficiency of a given intersection. The level of service ranges from A to F. Levels of service between A and D indicate the intersection is operating within capacity with LoS A providing exceptionally good performance to LoS D indicating satisfactory performance. LoS E and F indicate the intersection is operating at or near capacity and would require intersection improvement works to maintain reasonable performance. The long term desirable level of service is LoS D.



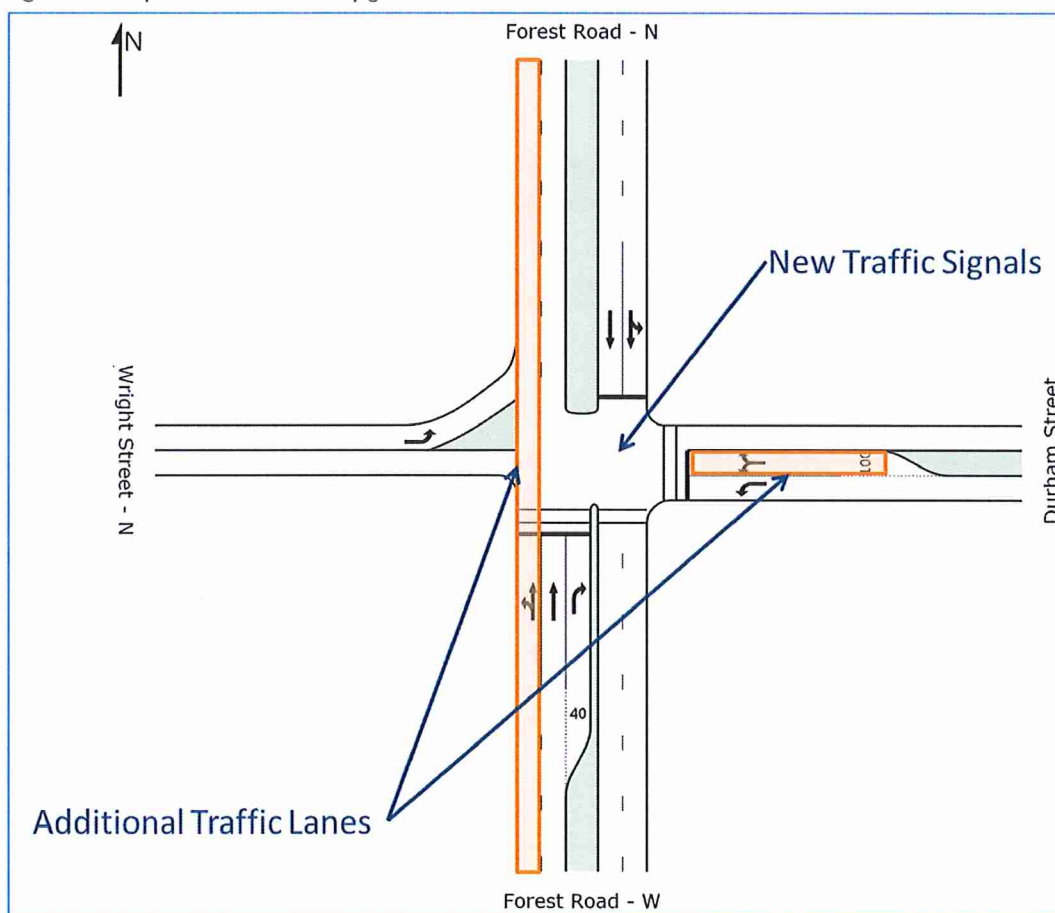
As can be seen from Table 5, the intersection of Forest Road with Durham Street would operate unsatisfactorily with LoS F in the future.

The intersection analysis was repeated with the following improvement road works:

- widening of Forest Road to provide additional traffic lanes during peak periods consistent with TMAP recommendations
- the Forest Road-Durham Street intersection upgraded to operate under signal control
- the introduction of right turn movement from Durham Street to Forest Road, and
- provision of an additional 100m long shared left and right lane on Durham Street.

The proposed intersection layout for Forest Road-Durham Street is shown in Figure 1.

Figure 1: Proposed Intersection Upgrade for Forest Road-Durham Street



The analysis results assuming that the Forest Road-Durham Street intersection would be upgraded to operate under traffic signal control are presented in Table 6.

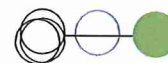


Table 6: Future Condition Analysis Results (Forest Rd-Durham St Upgraded to Signal Control)

Intersection	Intersection Type	Morning Peak Period		Evening Peak Period	
		Average Delays (s)	LoS	Average Delays (s)	LoS
Forest Rd-Durham St	Signals	33	C	46	D
Durham St-Lily St	Signals	27	B	26	B
Durham St Access	Priority	13	A	23	B

Note: RMS uses level of service as a measure to indicate the operating efficiency of a given intersection. The level of service ranges from A to F. Levels of service between A and D indicate the intersection is operating within capacity with LoS A providing exceptionally good performance to LoS D indicating satisfactory performance. LoS E and F indicate the intersection is operating at or near capacity and would require intersection improvement works to maintain reasonable performance. The long term desirable level of service is LoS D.

From Table 6, it can be seen that in the future the nearby assessed intersections including the site access intersection on Durham Street would operate satisfactorily.

Parking Effects

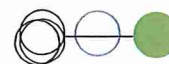
Parking requirements for the proposed development have been assessed against Council's requirements set out in Hurstville Development Control Plan 2 (DCP 2). The parking assessment is presented in Table 7.

Table 7: Stage 3 Parking Requirements

Use	No. of Units/Floor Area (m ²)	DCP Parking Rates	DCP Required Provision	Proposed Parking Rates	Proposed Required Provision
Residential Units					
- 1-Bedroom Units	161	1.0 space per unit	161	1.0 space per unit	161
- 2-Bedroom Units	148	1.0 space per unit	148	1.0 space per unit	148
- 3-Bedroom Units	70	2.0 space per unit	140	2.0 space per unit	140
- Residential Tenant Sub			449		449
- Visitors	379	1.0 space per 4 units	95	1.0 space per 6 units	63
- Residential Total			544		512
Retail	4,765	1.0 space per 27.5m ²	173	1.0 space per 27.5m ²	173
Total (say)			717		685

From Table 7 it can be seen that Stage 3 development would require a total of 717 car parking spaces in accordance with DCP requirement.

However, it is proposed to reduce the rate of parking provision for residential visitors. DCP 2 requires visitor parking for residential use to be provided at a rate of one space per four units. It is proposed to vary the visitor parking rate to one space per six units.



Parking surveys were conducted in August/September 2013 at the East Quarter Stage 1 visitor car park. The surveys reveal a parking demand rate of approximately one space per 10 units. On this basis, the proposed parking provision of one space per six units would provide more than adequate visitor parking at East Quarter.

The parking assessment based on reduced parking provision rate for residential visitors is also presented in Table 7. Reducing the parking provision rate for residential visitors to one space per six units would result in 32 car parking spaces less. As such, the overall parking provision would be 685 car parking spaces.

Given that the subject site is located within walking distance of two railway stations on a major suburban railway line with direct train services to Sydney CBD, as well as a major transport interchange at Hurstville Railway Station with bus services to major centres around Sydney metropolitan area, the site has merit to reduce parking provision for residential visitors.

It is noted that Council supports the above proposed visitor parking provision rate of one space per six units. This is documented in the Council's report to the JRPP relating to a previous DA for Stage 3. The Council's report to the JRPP indicates that the Council's traffic engineer does not object to amending the DCP required visitor parking provision rate of one space per four units to one space per six units.

The proposed residential visitor parking provision of one space per six units is also proposed to be applied to Stage 2 development. Stage 2 has been approved with 303 residential units which would require 76 visitor parking spaces under current DCP requirements. This would reduce to 51 parking spaces based on a rate of one visitor space per six units. However, this would be subject to a separate development application.

A preliminary review of the proposed car park layout indicates that the above car parking requirements for Stage 3 could be accommodated on site.

Finally, in relation to the design of the car parking areas it is proposed that these be designed in accordance with the relevant Australian Standard for car parking facilities.

Conclusion

Based on the preliminary traffic assessment detailed above, it is expected Stage 3 development would result in additional overall development traffic that the approved scheme would otherwise generate. Traffic analysis indicates that the assessed intersections would continue to be able to accommodate the additional traffic, however the Forest Road intersection with Durham Street would need to be upgraded to traffic signals.

The proposed parking provision would be satisfactory.

Overall, the traffic and parking effects of the proposed Stage 3 development would be satisfactory.

A more detailed traffic and parking assessment will be completed at the DA stage of the project.

