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Ref: 12 051

27 March 2012

Mecone
Suite 805
Level 8, 185 Elizabeth Street
Sydney NSW 2000

Attention: Aras Labutis

Re: Peer Review – Part 3A Application – Hilly Street Precinct - Mortlake

Dear Aras,

We refer to the abovementioned application and confirm that we have undertaken detailed site investigations and reviewed all relevant documentation made available to us. In particular, we are in receipt of the following documents which have formed the basis of our assessment:

- Environmental Assessment prepared by Mecone dated September 2011.
- Traffic Impact Assessment prepared by Transport and Traffic Planning Associates (TTPA) dated December 2010.
- Peer Review of Traffic Impacts Prepared by Transport & Urban Planning (TUP) dated September 2010.
- Mortlake Redevelopment Traffic Impact Assessment undertaken on Behalf of City of Canada Bay Council dated August 2010.
- TTPA Response to TUP Peer Review dated 18 March 2011.
- Addendum to the Traffic Impact Assessment prepared by TTPA dated 18 March 2011
- Minutes of the RMS's SRDAC Meeting dated 27 October 2011

We have reviewed the above and now provide the following advice in the context of undertaking an Independent Peer Review at the request of Mecone. This peer review focuses on the methodology in the original traffic report and subsequent peer review undertaken by TUP, the adequacy of the traffic analysis, and the appropriateness of the recommendations. Furthermore the report has also addressed the operation of key intersections in the locality and provides recommendations for the provision of services and infrastructure to minimise the impact of the development.

## EXECUTIVE SUMMARY

**TTPA – Traffic Impact Assessment**

TRAFFIX has undertaken a detailed review of the Traffic Impact Assessment Report undertaken by Traffic and Transport Planning Associates and the findings of this are summarised below.

*Method of Assessment:*

The Traffic Impact Assessment undertaken relies on surveys of some 200 residential units within the Canada Bay LGA. This approach is supported by TRAFFIX and is considered best practice as it takes due account of the localised factors influencing traffic generation such as proximity to public transport and other essential services.

*Traffic Generation*

The future site traffic generation established by TTPA of 0.3 veh/hr per dwelling during the AM peak period and 0.27 veh/hr per dwelling during the PM peak period are considered low. Independent surveys undertaken by TRAFFIX suggest a future generation rate of 0.4 veh/hr per dwelling for both the AM and PM peak periods is more appropriate which would result in an additional 39 veh/hr during the AM peak period and 51veh/hr during the PM peak period. This increase is nevertheless moderate in absolute terms and in fact the resultant generation still remains less than the existing generation of the site. Accordingly the conclusions reached by TTPA with respect to future traffic generation are supported.

*Traffic Impacts*

The TTPA report concludes that the future traffic generation is less than that which has occurred historically and as such will have no impact on the operation of critical intersections in the locality. While this may be the case, the directional splits are different. Accordingly, TRAFFIX has undertaken an assessment of two critical intersections not assessed by TTPA, being Hilly Street with Bertram Street and Bertram Street with Tennyson Road under both existing and future scenarios. The future scenarios assessed included an assessment based on the traffic generation adopted by TTPA as well as the adjusted generation adopted by TRAFFIX. The results of this assessment indicated that these critical intersections will continue to operate satisfactorily the conclusions reached by TTPA have been shown to be supportable.

*Trip Distribution*

The distribution of trips associated with the future development has been assigned in accordance with the results of the surveys undertaken by TTPA. A comparison with the 2006 Ministry of Transport Journey to Work Data to the distribution adopted by TTPA indicated some variation in the likely destinations of future residents to those identified through the survey. The variation in distribution has however been assessed as discussed above and has no impact on the operation of future intersections in the vicinity of the site.

*Conclusions*

Accordingly, the general methodology and conclusions reached by TTPA are considered supportable on traffic planning grounds.

**TUP – Peer Review**

The peer review undertaken by TUP has also been reviewed and our findings are summarised below.

*Traffic Generation*

The peer review undertaken by TUP suggests that the rates established by TTPA are not representative of actual conditions and suggests the use of the RMS's Medium Density rates for assessment of the future traffic generation of the site. We disagree with this approach. In this regard, the RMS rate for medium density residential units is not applicable as the level of density proposed considerably exceeds that envisaged under the Guide. In addition, the rates established from two independent surveys of comparable developments by both TRAFFIX and TTPA clearly demonstrate a lower level of generation to that proposed by TUP. Accordingly, the rates proposed by TUP are not considered appropriate in the circumstances.

*Traffic Generation*

TUP raises concerns with regards to the trip distribution adopted by TTPA. In particular the variation between that adopted and Council's Trip Distribution Matrix produced derived through review of comparable developments within the LGA. The trip distribution matrix results in a varied distribution to that adopted by TTPA and that derived through review of the 2006 JTW Data. Notwithstanding this, an assessment undertaken by TRAFFIX indicates that even under a worst case scenario, the critical intersections in the locality will continue to operate at existing levels of service and delays regardless of the distribution identified by TTPA or the adoption of Council's trip distribution matrix.

*Intersection Amendments*

TUP raises concerns regarding the recommendation by TTPA to apply peak period 'No Stopping' restrictions on existing collector roads and prohibit right turn movements at key intersections.

It is our view that no upgrades at any critical intersections are considered necessary to facilitate the traffic associated with the proposed development. Any upgrades that may be contemplated would be to address existing capacity constraints/deficiencies and are not attributable to the proposed development.

**RMS Comments**

The application has been reviewed by the RMS on the 19th October 2011 as part of the Sydney Regional Development Advisory Committee meeting. The RMS response to the DoPI dated 27th October 2011 does not raise any concerns with regards to the overall parking provision or traffic impacts of the development on the external road network.

**TRAFFIX Conclusions**

In general the conclusions reached in the TTPA report are supportable and this is reflected in the relatively minor comments raised by the SRDAC. In particular we note that:

- The intersection modelling undertaken by TRAFFIX demonstrates sufficient capacity within the local road network to accommodate the generation of the development under both data the TTPA and TUP generation rates.
- The issues raised by TUP in its peer review are minor and indeed in some cases irrelevant due to the misinterpretation of the RMS documentation.
- The parking proposed as part of the application is generally considered supportable, however it is noted that TRAFFIX recommends that the rate of 1 space per 5 dwellings for visitor parking be adopted.

It is the view of TRAFFIX that conclusions reached by TTPA are valid and suitable for assessment purposes.

## Site

The subject site lies within the existing industrial precinct located at the northern end of the Mortlake peninsular within the Canada Bay Local Government Area. The site includes 24 existing fragmented allotments with a total site area of 27,431m$^2$.

The surrounding area generally consists of a mix of industrial developments and new residential flat buildings including the Breakfast Point redevelopment to the east. The primary access to the site is via Hilly Street which provides access to Bennet Street, Northcote Street and Edwin Street.

The site currently comprises multiple industrial/warehousing and office developments including:

- 17,015m$^2$ of manufacturing and office floor space
- 1,635m$^2$ of warehouse floor space, and.
- Employment of approximately 240 employees

## Development Description

A detailed description of the Concept Plan Application is provided in the Environmental Assessment (EA) report prepared by Mecone. In summary, the Concept Plan development for which approval is now sought relates to the establishment of residential uses and building envelopes, density, road layout, car parking and landscaping across the subject site. The proposal comprises the following key components:

- Construction of 6 residential precincts and 15 residential flat buildings comprising 402 apartments including:
    - 60 one bedroom dwellings.
    - 201 two bedroom dwellings; and
    - 141 three bedroom dwellings.
- The provision of parking at the rates documented in Section 3.2 of the EA.
- The construction of basement car parking accessed via 5 separate access connections.

The impacts of this proposed development are discussed below and take account relevant documents outlined above.

## Existing Traffic Generation

TTPA has assessed the existing generation based on application of the RMS Guide. Whilst this methodology is generally acceptable, a more appropriate assessment would have been to undertake a survey of the existing developments to establish their precise generation. In this regard, information provided by Mecone and observed during site investigations, indicates that many of the existing developments on the site are no longer operational and as such a survey

based assessment is not possible. In the absence of existing generation data, the methodology adopted by TTPA is therefore the most accurate method of assessment available and is supported.

In this regard, TTPA have assessed the existing site traffic generation as 183 veh per hour during peak periods.

- Future Traffic Generation

The Traffic Impact Assessment undertaken by TTPA assessed the future traffic generation of the site based on surveys of some 200 residential units within the Canada Bay LGA. This approach is supported by TRAFFIX and is considered best practice as it takes due account of the localised factors influencing traffic generation such as proximity to public transport and other essential services.

The results of the surveys are summarised below for the AM and PM peaks:

- AM: 0.30 vehicle trips per hour/unit.
- PM: 0.27 vehicle trips per hour/unit.

These rates are consistent with those established in the RMS's Guide to Traffic Generating Developments which suggests adoption of a rate of 0.29 vehicle trips per hour (vtph) for high density residential flat buildings within metropolitan sub regional centres.

However, the proposed development is located within an area which arguably does not reflect the same availability of essential services and accessibility to public transport as is achieved within subregional centres. These include centres such as Artarmon, Bankstown, Brighton-Le-Sands, Burwood, Chatswood, Cronulla, Miranda, North Sydney, Strathfield and Sutherland, as surveyed in the RMS Land Use Traffic Generation Data and Analysis Report No. 23. Accordingly, the rates adopted by TTPA are considered lower than those which may be expected for this location.

Independent surveys undertaken at Breakfast Point and other comparable locations by TRAFFIX to assess the adequacy of the rates adopted by TTPA yielded generation rates of approximately 0.4 vtph for both the AM and PM peaks which represents a moderate increase in traffic generation to that adopted by TTPA.

The peer review undertaken by TUP also suggests that the rates established by TTPA are not representative of actual conditions and suggests the use of the RMS's Medium Density rates for assessment of the future traffic generation of the site. We disagree with this approach. In this regard, the RMS defines medium density flat buildings as:

***Medium density residential flat building:*** *a building containing at least 2 but less than 20 dwellings. This includes villas, town houses, flats, semi-detached houses, terrace of row houses and other medium density developments, but does not include aged or disabled persons' housing*

This definition is not representative of the proposal and accordingly the application of the medium density generation rates should not be applied to this site which has a development intensity that is considerably higher than that considered by the RMS. A summary of the TTPA, TUP and TRAFFIX future generation is summarised below based on the proposed 402 apartments:

**Table 1: Comparison of Traffic Generation**

| Assessment | Adopted Rate/Unit | Implicit Traffic Generation (vph) |
|---|---|---|
| TTPA | AM: 0.3 vtph | 121 |
| | PM: 0.27 vtph | 109 |
| TUP | AM: 0.65 vtph | 261 |
| | PM: 0.65 vtph | 261 |
| TRAFFIX | AM: 0.4 vtph | 160 |
| | PM: 0.4 vtph | 160 |

It is evident from Table 1 that the generation identified by TRAFFIX represents an increase of between 24% to 32% above that adopted by TTPA. These rates however are significantly less that that identified by TUP which are not considered representative of future conditions for the reasons discussed and should not be adopted. It is therefore concluded that the likely future generation of the site will lie within the range defined by TTPA and TRAFFIX. Notwithstanding this, the rates above do not represent a net change in traffic generation as consideration of the existing development needs to be taken into account.

In this regard the existing developments have been assessed as generating in the order of 180 veh/hr. As such the proposed development will result in a net reduction in peak hour trips associated with the recent generation associated with the site, regardless of whether the TTPA or TRAFFIX generation rates are adopted.

- Assumed Modal Splits

In order to assess the future traffic distribution and modal splits associated with the proposed development, TTPA undertook a questionnaire survey of some 200 existing occupied apartments within the Breakfast Point Precinct. The results indicated the following modal splits and directional travel to/from the precinct for the 53 respondents:

**Table 2: TTPA Modal Split Questionnaire Results**

| Mode | % Usage |
|---|---|
| Car (including car to rail) | 71 |
| Bus | 12 |
| Ferry | 23 |
| Work at Home/Retiree | 5 |

For comparison purposes, TRAFFIX has undertaken a review of the 2006 Journey to Work Data for Travel Zone -1504 (which generally includes the Breakfast Point and Mortlake Peninsular) to establish the historic modal splits for the locality. The results of this assessment are summarised below for residents travelling from the travel zone:

**Table 3: 2006 JTW Data – TZ1504**

| Mode | % Usage |
|---|---|
| Car (including car to rail) | 77 |
| Car Passenger | 4 |
| Bus | 4 |
| Other (including Ferry) | 3 |
| Work at Home/Retiree | 12 |

It is evident that the 2006 JTW data is comparable to the results relied upon by TTPA however they demonstrate a much lower reliance on public transport. The TTPA surveys demonstrated an overall public transportation usage of some 35% (excluding trips associated with Rail) compared to 7% recorded by the Ministry of Transport.

The variation between the JTW Data and the TTPA surveys for car driver trips is unlikely to have any significant impact on the traffic generation assessment or future distribution of trips.

- Assumed Future Distributions

The TIA relies on the results of the surveys discussed above to identify the future trip distribution associated with the development. Whilst this approach is supported the results do not match those identified by Council for the Canada Bay Local Government Area as discussed in the TUP peer review. Whilst TTPA accepts that the basis of Council's trip distribution are unknown, it dismisses its validity stating that they relate to an LGA wide study and do not reflect the specific locational circumstances of the precinct.

Although it is agreed that the methodology adopted by TTPA is appropriate and arguably more reliant that a broader LGA study, the number of respondents may not provide a realistic representation of future trip distributions. With a total of only 54 respondents and 71% car drivers this reflects a sample size of only 38 drivers. The high number of northbound vehicles, and indeed drivers using the Putney Punt (20%) is also questionable.

For the purpose of sensitivity testing, a review of the 2006 JTW Data has been undertaken and the results are summarised below in Table 4 for the total number of car drivers to each major Statistical Sub Division (Destinations):

### Table 4: 2006 JTW Data – TZ1504 to SSD Destination by Car Driver

| Destination | Car Driver |
|---|---|
| Inner Sydney | 76 |
| Eastern Suburbs | 9 |
| St George-Sutherland | 19 |
| Canterbury-Bankstown | 25 |
| Fairfield - Liverplool | 16 |
| Outer South Western Sydney | 9 |
| Inner South Western Sydney | 82 |
| Central Western Sydney | 81 |
| Outer Western Sydney | 0 |
| Blacktown | 12 |
| Lower Northern Sydney | 60 |
| Central Northern Sydney | 28 |
| Northern Beaches | 12 |
| **Total Trips** | **429** |

The above date generally relates to the following directional distributions:

### Table 5: 2006 JTW Data – TZ1504 by directional Distribution

| Direction of Travel Summary | Volume | % |
|---|---|---|
| North | 100 | 23% |
| South | 60 | 14% |
| East | 85 | 20% |
| West | 184 | 43% |
| **Total** | **429** | **100%** |

It is emphasised however that this does not take into account the localised routes that traffic departing the precinct would rely upon. Based on the final destinations it has therefore been assumed for assessment purposes as follows:

- Traffic departing to the north would do so via Concord Road.
- Traffic departing to the east would do so via Queen or Lyon Road.
- Traffic departing to the south and west would do so via Concord Road or Parramatta Road (assume Concord Road for comparison purposes); and
- Vehicles departing to the west would do so via Parramatta Road.

Table 5 below compares the above assumptions made from analysis of the JTW Data to that assumed by TTPA in the TIA report:

**Table 5: Trip Distribution Comparison**

| Direction of Travel Summary | JTW Data | TTPA |
|---|---|---|
| Concord Road | 37% | 54% |
| Parramatta Road | 43% | 6% |
| Queen or Lyon Road | 20% | 20% |
| Putney Punt | 0% | 20% |

It is evident from above that the distributions based on the JTW data which includes a significantly larger sample of residents results in a different distribution pattern to that adopted by TTPA. While it would be beneficial to undertake an additional survey to ensure the accuracy of the results relied upon by TTPA (particularly as this has been questioned by TUP in its peer review based on Council's data) this is not considered necessary in circumstances where the traffic generation associated with the proposed development is likely to be consistent with the traffic generation of the existing uses on-site.

As such the distribution assumed in the TIA is in our view sufficient for assessment purposes of critical intersections in the locality, particularly given the significant number of routes available for vehicles accessing the regional road network, whereby any 'error' is quickly reduced as traffic loadings dilute further from the site.

- Future Intersection Operation

TTPA has not undertaken any intersection analysis of the development based on the premise that the future development would generate less traffic than that which has historically occurred. Whilst this may be the case, TRAFFIX considers that further analysis of the future operation of critical intersections was required for the reasons outlined below:

1. The development will result in a change in the directional splits of vehicles accessing the site. Historically traffic generation associated with the site entered in the AM and departed in the PM. This pattern will reverse under the application based on the changed land use to residential and this may have impacts on localised intersections under future conditions; and

2. The distribution of traffic (assuming adoption of the rates included in the TTPA report) would result in approximately 80% of all vehicles accessing the intersection of Bertram Street and Hilly Street and approximately 57% of traffic utilising the intersection of Bertram Street and Tennyson Road. Whilst no change in Level of Service is expected at the intersection of Hilly Street and Bertram Road, some increases in delays are anticipated at the intersection of Tennyson Road and Bertram Street, particularly delays associated with the right turn movement from Bertram Street. This movement has been observed to operate with some minor delays under existing conditions.

Accordingly, TRAFFIX has undertaken surveys of the critical intersections identified above. These were undertaken on a typical weekday during the AM peak period to assess the existing and future operation based separately on both the TTPA and TRAFFIX generation and distributions. The results of this assessment are summarised in Table 6 below:

**Table 6: Future AM Peak Period Intersection Operation**

| Intersection Description | Scenario | Control Type | Degree of Saturation | Intersection Delay | Level of Service |
|---|---|---|---|---|---|
| Bertram Street & Hilly Street | Existing | Roundabout | 0.07 | 7.0 | A |
| | TTPA | | 0.07 | 7.0 | A |
| | TRAFFIX | | 0.07 | 7.0 | A |
| Bertram Street & Tennyson Road | Existing | Priority | 0.36 | 18.7 | B |
| | TTPA | | 0.48 | 21.4 | B |
| | TRAFFIX | | 0.64 | 26.0 | B |

It is evident from the table above that the critical intersections in the locality will continue to operate with the same levels of service as at present under both the TTPA and TRAFFIX generation and distribution assumptions. In this regard, there is sufficient capacity within the local road network to accommodate the proposed development and the conclusions reached in the TTPA report are therefore supportable.

- Access and Internal Design

The access and internal design principles appear to comply with relevant standards and are therefore supportable, subject to the incorporation of an appropriate condition requiring compliance with the relevant standards. It is however noted that this is a Concept Plan application only and as such does not seek approval for the internal design aspects of the development at this time.

## Parking

The parking rates outlined in the TIA are considered supportable with the exception of the minimum visitor parking provision. Although it is considered that Council's requirement of 1 visitor space per 2 dwellings would result in a high level of provision, the adopted rate of 1 per 10 units is considered insufficient to accommodate expected visitor demands off-street and will probably result in on-street parking and associated amenity impacts. It is therefore recommended that a `minimum rate of 1 space per 5 dwellings be adopted which reflects the RMS's rate for high density residential flat buildings in sub-regional centres.

It is also recommended that Council give consideration to introducing a residential parking scheme and that this scheme should not be extended to exclude future occupants of the proposed development. This has been implemented by other Councils in relation to comparable developments and is an appropriate mechanism to protect the amenity of existing residents from on-street parking impacts.

## Public Transport

The approach adopted in the TTPA report is considered supportable and appropriate. It is noted that the population increase in the locality associated with the proposal will unlikely be of a level which would support additional services or frequencies. However the opportunity exists to lobby the State Transit Authority in conjunction with the developers of Breakfast Point to achieve an outcome that is beneficial to both developments and this is supported.

The approach adopted by TTPA to upgrade existing supplementary facilities such as shelters, lighting and service information is also supported and will provide a benefit to the community as a whole. This requires further detailed assessment, for inclusion in an appropriate condition.

## Other Considerations

At the request of Mecone, we have undertaken a review of additional measures that have not been considered by TTPA and which have the potential to improve the existing amenity in the locality. The measures identified by TRAFFIX are summarised below:

- As discussed above, it is recommended that a residential parking scheme be implemented but not made available to future residents to ensure that the development minimises reliance on on-street parking supply. This will protect the amenity of existing residents and users of the Wangal Centenary Bushland Reserve.

  TRAFFIX has undertaken a review of the existing traffic queuing along Hilly Street resulting from the Mortlake Ferry (as documented by residents). In this regard, there appear to be limited options available to overcome this issue. The only feasible option is likely to be to extend the existing periodic parking along Hilly Street further south, with more effectively enforcement. It is relevant however that this is an existing problem which requires consideration by Council and the RMS in the current context. The applicant is however willing to implement additional signposting or line marking to assist in the management of existing queues, subject to further consideration of available options by Council.

- The application could be conditioned to require the preparation of a Transport and Accessibility Guide. A transport and accessibility guide provides information to residents including local bus and rail network maps and timetables, cycle route maps, essential services within walking distances, taxi numbers and location and contact details of car share operators,

car sharing etc. The provision of this information to residents will ensure that they are aware of public transport and other non-car travel options available to them, thereby reducing car dependency.

The implementation of the Transport Access Guide is therefore strongly supported and will encourage the use of alternative transport options and assist in meeting the relevant travel targets established by the NSW State Government.

- It is also recommended that the applicant consider the supply of a single bicycle with each dwelling as well as the commensurate provision of bicycle parking for residents and visitors. This would be in excess of Council's requirements and this approach has been proposed at similar residential developments and would assist in achieving a reduced reliance on cars for local trips.

## Conclusions

In general the conclusions reached in the TTPA report are supportable and this is reflected in the relatively minor comments raised by the SRDAC. We do note however that the future traffic generation and distribution adopted by TTPA vary from those identified by TRAFFIX. However as demonstrated by the intersection modelling above, sufficient capacity within the local road network exists to accommodate the generation of the development under both data sets.

The issues raised by TUP in its peer review are minor and indeed in some cases irrelevant due to the misinterpretation of the RMS documentation. In particular, the traffic generation rates outlined in the TUP report are based on the incorrect application of the RMS Guideline, such that the conclusions reached by TUP should not in our view be given any weight.

We trust that this advice is of assistance and we are available to attend any meetings, should this be required. Please contact the undersigned should you have any queries regarding this matter.

Yours faithfully,

**traffix**

Andrew Johnson
**Associate Engineer**