



M^CLAREN TRAFFIC ENGINEERING

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440
Fax: +61 2 9521 7199
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678 RPEQ: 19457

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

12th April 2018

Reference: 18028.02FA

Platform Project Services Pty Ltd
Level 3, 95 Pitt Street
Sydney NSW 2000
Attention: Kade Astley

RESPONSE TO WILLOUGHY CITY COUNCIL (ARUP) TRAFFIC REPORT OF RESIDENTIAL DEVELOPMENT AT ARTARMON ROAD, WILLOUGHBY

Dear Kade,

Reference is made to your request to provide a Response to Willoughy City Council (ARUP) Traffic Report by *ARUP* dated 19th February 2018 for the new proposed modification application to the approved concept plan for the Channel 9 site on Artarmon Road, Willoughby as reproduced in **Annexure A** for reference.

A review of the Traffic Impact Assessment has been undertaken by ARUP with the following findings outlined within the report:

1. Reduction of 17 on-street car parking spaces (16 along Artarmon Road and 1 within Richmond Avenue). Increase of 66 on-street car parking spaces within Scott Street and implementation of a resident parking permit scheme (time restricted parking) as a result of the loss of 17 on-street car parking spaces;
2. Design requirement for a 12.5m length HRV to manoeuvre without crossing the centreline required as the design vehicle for the purpose of deliveries (removalists).
3. Safety concern (reduced sight lines) over the proposed roundabout and angle of approach vehicles from Scott Street
4. Traffic modelling shows that, with the proposed development yield under the modification (495 dwellings), the Willoughby Road / Artarmon Road intersection operates over capacity with a degree of Saturation above 1.0 for various different scenarios. Should no upgrades proceed, the Willoughby Road / Artarmon Road intersection will not operate at satisfactory levels and the additional development of the site would not be appropriate.

M^CLaren Traffic Engineering (MTE) provides the following responses to the finding outlined within ARUPS Traffic Impact Assessment.

1. This is in accordance with the approach for on-street visitor parking under the existing concept approval. The proposed development will be increasing the on-street car parking capacity by 49 spaces over the existing on-street supply. The implementation of a residential permit parking scheme may not be necessary considering the existing 16 spaces along Artarmon Road are not time-restricted or provided with a current residential permit parking scheme. The implementation of a residential permit parking scheme is subject to Council and their Local Traffic Committee.
2. As previously supported in a letter dated 30th March 2017 by M^CLaren Traffic Engineering, delivery vehicles under AS2890.1:2004 can use the full width of the access driveway for both entering and leaving the site. While ARUP recommends that the design allow for a 12.5m length Heavy Rigid Vehicle, Council's waste collection service measure at 9.9m in length which has been adopted as the largest design vehicle. While it is expected that removalists deliveries will occur occasionally, these vehicles do not warrant a design in excess of a 9.9m length delivery vehicle, as a majority of the units are expected to be 1 and 2 bedroom units and in addition under a C-Class licence, drivers are restricted to 4.5 tonne vehicles, which would typically correspond to 6.4m Small Rigid Vehicle. Future tenants will be made fully aware of the loading facilities provided on-site and the provision of a loading area for vehicles generally 10m in length will provide acceptable delivery options for residents.
3. ARUP's traffic report raises concerns in relation to the roundabout intersection upgrade of Artarmon Road / Scott Street, namely sight lines. The provision of this facility is required as a mitigation measure not just on traffic flow grounds, but also required to provide traffic calming effects along Artarmon Road by slowing vehicles. Reference is made to AUSTROAD *Guide to Road Design Part 4B: Roundabouts* which requires sight lines of 22m for an approach speed of 20km/h, which is a likely scenario considering the traffic calming device of the roundabout. This required sight line looks to be achievable for the proposed roundabout and will be considered during the concept design and detailed civil design of the roundabout intersection to ensure compliance with AUSTROAD design requirements. In addition to the development of civil plans, it is considered that the proposed roundabout be subject to a Road Safety Audit by an RMS accredited auditor to assess the approach gradients that exceed the recommended 3 - 4% as outlined in AUSTROADS. The 3 – 4% is mainly required to provide sufficient sight lines from the hold / giveaway line as well as appropriate acceleration into the roundabout. It is relevant to note that Craig M^CLaren is an accredited Level 3 Road Safety Auditor.
4. The traffic modelling results within ARUP's report indicates that the intersection of Willoughby Road / Artarmon Road / Small Street is operating overall with a Level of Service (LoS) "B" during the Thursday Peak hour period and LoS "F" during the Saturday peak period under the accumulative assessment.

LoS "B" represents a good LoS with acceptable delays and spare capacity maintained. While the degree of saturation for the minor leg exceeds 1 during the Thursday peak period, all other traffic legs do not exceed a degree of saturation of 0.81, indicating that all other legs are operating satisfactory and are not over capacity. The intersection as a whole operates with an average delay of 24.7 seconds, being an acceptable outcome. Notwithstanding the aforementioned the SIDRA finding which results in Small Street having a degree of saturation greater than 1, has been run using a user-given cycle time rather than an optimum cycle time, which may provide false / incorrect results.

The proposed modification from 400 units to 495 results in an additional 30 and 24 (based upon 0.32 trips per unit on Thursday and 0.25 trips per unit on Saturday) vehicle trips during the PM peak period and Saturday peak period respectively. This additional traffic is considered minor considering the current traffic flow volumes at the intersection of Willoughby Road / Artarmon Road / Small Street and the traffic generation from the surrounding developments. It is likely that the reduction of these 30 and 24 vehicle trips during the Thursday and Saturday peak periods would result in the same intersection results provided by ARUP. In view of the above the additional 95 units is not expected to have a detrimental impact upon the operation of the intersection of Willoughby Road / Artarmon Road / Small Street when assessed as an accumulative assessment.

It is also relevant to note, that the proposed development of 495 dwellings when assessed does not result in Small Street exceeding a Degree of Saturation of 1, but rather the complete contribution of all nearby developments contributes to this result. In view of this it is not appropriate or the responsibility of this development for the entire upgrade of the intersection considering that other developments have been included within the assessment. It is envisaged that each of the approved developments are expected to contribute financially toward broader local traffic improvements via Section 94 development contributions levied by Willoughby City Council.

Whilst the SIDRA results during the Saturday peak period indicates a LoS "F" this is a result of right turns from Willoughby (south) being allowed into Small Street during the Saturday period. Consideration should be made to restricting right turns into Small Street from Willoughby (south), which will improve the intersection operation, consistent with the operation during the weekday period. This will improve the accumulative assessment operation of the intersection, with results likely to be similar to the weekday operation, albeit better. It is relevant to note, that the Saturday traffic flow volumes at the intersection of Willoughby Road / Artarmon Road / Small Street are less than the Thursday peak period.

It was previously agreed in the existing Statement of Commitments in the approved concept that the proponent would liaise with RMS to decide whether the existing weekday "*No Right Turn*" into Artarmon Road be extended to include Saturday. As mentioned above, the intersection operates at LoS "F" on Saturday due to right turns into Small Street. Rather than restricting right turns into Artarmon Road, consultation with the RMS can be undertaken to decide whether the existing weekday "*No Right Turn*" into Small street be extended to include Saturday.

Please contact Mr Matthew M^CCarthy or the undersigned should you require further information or assistance.

Yours faithfully

McLaren Traffic Engineering



Craig M^CLaren

Director

BE Civil. Graduate Diploma (Transport Eng) MAITPM MITE [1985]

RMS Accredited Level 3 Road Safety Auditor

RMS Accredited Traffic Control Planner, Auditor & Certifier (Orange Card)

ANNEXURE A: MODIFICATION APPLICATION PLANS

