Our Ref: 16065

15 May 2018

AMP Capital Investors
50 Bridge Street
SYDNEY NSW 2000

Attention: Mr Robert Lewis

Dear Rob,

RE: MARRICKVILLE METRO S75W PROPOSED MODIFICATIONS RESPONSE TO SUBMISSIONS

As requested, The Transport Planning Partnership (TTPP) has prepared this letter in response to submissions made by the consent authorities/agencies in relation to a Section 75W application for the above proposed development submitted to the Department of Planning and Environment.

1 Background

The proposed expansion of Marrickville Metro Shopping Centre was first granted planning approval in March 2012. Following this, there were a number of subsequent approved modifications.

In October 2017, a Section 75W (S75W) application was submitted to the Department of Planning and Environment (DPE) seeking approval to refine and enhance the approved development. The proposed modifications predominantly relate to Stage 1B of the proposed development as follows:

- changes to the retail layout
- alterations to the building façade on Smidmore Street
- extension of the Centre's operating hours
- proposed pedestrian bridge linking the new building to the existing Centre
- modifications to the western section of Smidmore Street to provide one-way traffic flows
- introduction of a right turn access on Edinburgh Road into the proposed development
- introduction of paid parking, and
- redistribution of floor area/car parking provision across the development within the approved floor area/car parking provision.

Following the completion of the proposed modifications in this S75W application, the overall Centre will continue to have a total gross leasable floor area (GLFA) of 39,700m^2 (increasing from 22,933m^2 GLFA by 16,767m^2 GLFA) as per the March 2012 approval. Similarly, the overall car parking provision will remain at 1,606 car parking spaces as per the original approval.

The application has been reviewed by the relevant consent authorities/agencies and submissions have been made to DPE.

This letter provides TTPP's responses to the traffic and parking related matters raised in the submissions from the relevant authorities and agencies. TTPP has also responded to relevant submissions from the local residents. These are provided at the end of this letter.

2 TTPP's Response to Submissions by Agencies

This section presents the relevant submission from each authority/agency in detail followed by TTPP's response to the matter raised.

3 Submission from Roads and Maritime

3.1 Configuration of Proposed Edinburg Road Right Turn Bays

The comment made is as follow:

> *The proposed right-turn access and bay along Edinburgh Road has the potential to increase the risk of rear-end vehicle collisions due to its proximity to the traffic control signals at Edinburgh Road and Smidmore Road. There is the potential that drivers seeking to turn right at the traffic signals may not expect the sudden stopping of a leading vehicle waiting to turn right into the Edinburgh Road access.*
>
> *As a minimum, it is advised that separate right-turn bays should be provided for each movement subject to satisfactory analysis demonstrating that the resultant right-turn bays would be adequate for estimated vehicle queues. This would also require the restriction of right-out egress movements to Edinburgh Road (as proposed).*
>
> *Should the analysis demonstrate that the above not be considered suitable, the access from Edinburgh Road should be maintained as left-in/left-out as per the approved development.*

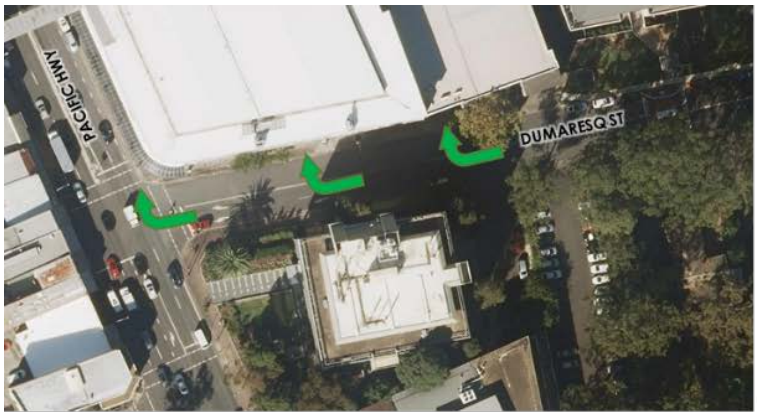
TTPP has identified several examples of such combined right turn arrangements where vehicles can turn right into a driveway/street in the same lane as an exclusive right-turn lane for a downstream signalised intersection. These examples include:

- Northbound along Pacific Highway, Chatswood at Victoria Avenue signalised intersection
- Eastbound along New South Head Road, Double Bay at the Kiaora Road/Bellevue Road signalised intersection

- Southbound along Richmond Road, Blacktown at Lyton Street
- Westbound along Albert Avenue at Pacific Hwy, Chatswood
- Northbound along Greenwich Road at Pacific Highway, St Leonards, and
- Eastbound along Dumaresq Street at Pacific Highway, Gordon.

Figure 1 shows some examples of existing combined right turn bay arrangements.

Figure 1: Some Existing Examples of Combined Right Turn Lane



GORDON

BLACKTOWN

DOUBLE BAY

CHATSWOOD

It is noted that Roads and Maritime is concerned that the proposed combined right turn bay arrangement may cause an increase in rear end collisions. In this regard, TTPP has obtained crash statistics from Roads and Maritime for the five-year period from 2012 to 2016 at sites having similar combined right turn arrangements.

Crash data has been reviewed to determine the number of rear end collisions which have occurred in the vicinity of these locations. This data has also been compared to total number of crashes at the same location. The results are presented in Table 1.

Table 1: Rear end Crash Statistics at Combined Lane Arrangement (2012-2016)

Location	Rear End Crashes§			All Crashes			Proportion of Rear End Crashes
	Non-Fatal Crashes	Fatal Crashes	All Crashes	Non-Fatal Crashes	Fatal Crashes	All Crashes	
Pacific Highway at Victoria Ave, Chatswood	4	0	4	14	0	14	29%
New South Head Rd at Kiaora Rd, Double Bay	4	1	5	24	1	25	20%
Richmond Rd at Lyton Rd, Blacktown	2	0	2	22	0	22	9%
Albert Ave at Pacific Hwy, Chatswood	0	0	0	32	0	32	0%
Greenwich Rd at Pacific Hwy, St Leonards	0	0	0	13	1	14	0%
Dumaresq St at Pacific Hwy, Gordon	0	0	0	5	1	6	0%

§ - Due to the limitation in how the crash data has been presented, the number of rear end crashes may be overstated in the above table explained in the main text of the report.

As can be seen in Table 1, rear end crashes at existing combined right turn arrangements represent only a small proportion of overall crashes. At half of the nominated example sites, rear end crashes did not occur during the five-year period. At the remaining sites, rear end crashes made up less than 30 per cent of all crashes.

Notwithstanding, it is noted that Table 1 may have overstated the number of rear end collisions due to the limitation in how the crash data has been presented. The rear end collisions reported above may or may not occur in the traffic lane that contains the combined right turn lanes. For example, the rear end crashes may have occurred on the adjacent through lane instead of on the combined right turn lane. Therefore, there is the possibility that the number of rear end crashes may be overstated in the above table.

Additional crash data has also been obtained for a number of select local government areas (LGAs) (namely within the LGAs of the existing example of combined right turn lanes). The additional crash data compares the number of rear end crashes at all types of road configuration against all types of crashes within the LGA. Similar data was also obtained for the Sydney region as well as the entire state of New South Wales. This data is presented in Figure 2 with detailed reports contained in Attachment One.

Figure 2: LGA/Sydney/NSW Rear End Crash Proportions (2012-2016)

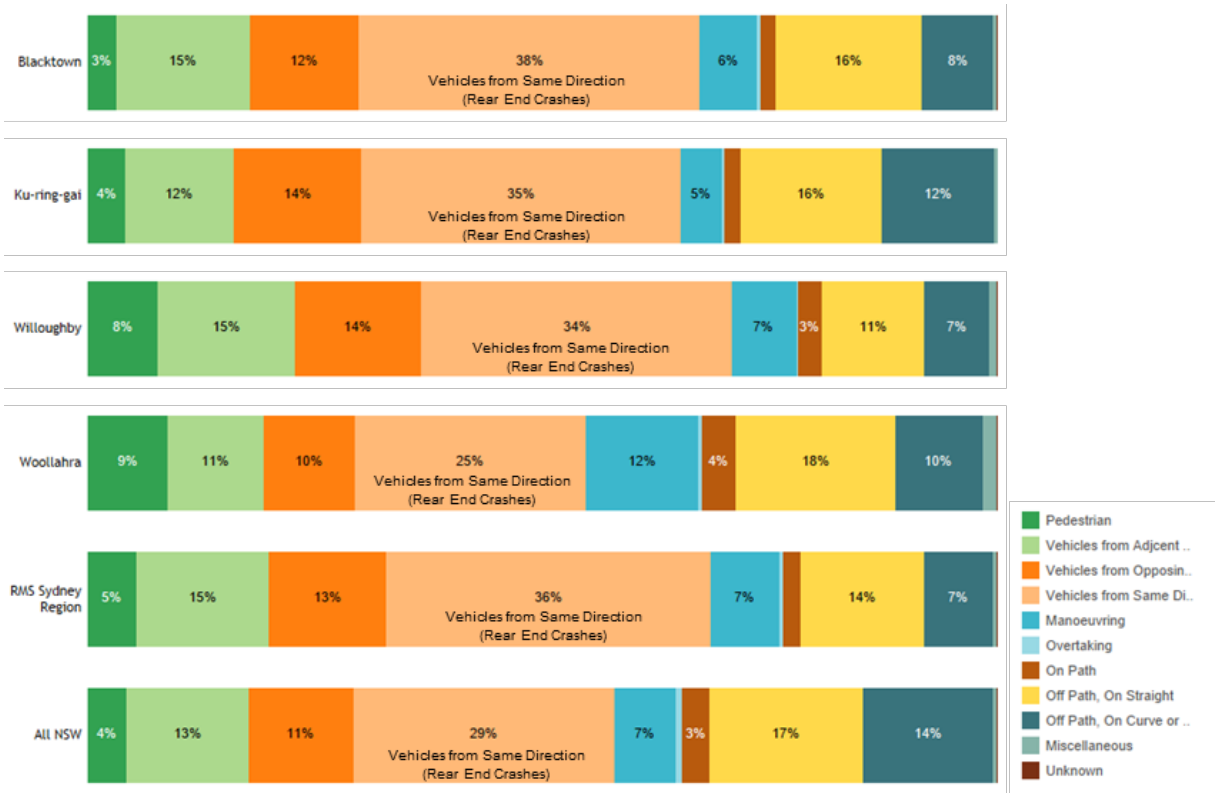


Figure 2 shows that rear end crashes has the largest proportion of crashes across Sydney and wider NSW regardless of the road arrangements and configurations. The proportion of rear end crashes can be as higher as 38 per cent in Blacktown LGA and 36 per cent across Sydney region.

From the above analysis, it can be seen that the number and proportions of rear end crashes at existing combined right turn lane are not atypical of Sydney and NSW crash characteristics. As such, the proposed combined right turn arrangement is not expected to result in increase in rear end crashes.

In addition, there would be signage provided along Edinburgh Road indicating the location of the turn facilities. An example of such a sign is shown in Figure 3. This would assist with reducing any potential of rear end crashes.

Figure 3: Edinburgh Road Signage

In response to Roads and Maritime's request for additional traffic analysis to demonstrate the traffic efficiency of a separate right turn configuration, TTPP has conducted the analysis using SIDRA intersection modelling software. TTPP also included the analysis of combined right turn bay to compare the traffic performance of both options. The SIDRA modelling results are presented in Table 2 and Table 3 for the combined turn bay option and separate turn bays options respectively.

Table 2: Post Development Modelling Results (Combined Turn Bay)

Intersection	Control	Thursday Peak Period		Saturday Peak Period	
		Delay (s)	LoS	Delay (s)	LoS
Edinburgh Rd/Smidmore St	Signals	17	B	40	C
Edinburgh Access	Priority	6	A	7	A
Edinburgh Rd/Sydney Steel Rd	Roundabout	14	A	16	B

Table 3: Post Development Modelling Results (Roads and Maritime Separate Turn Bays)

Intersection	Control	Thursday Peak Period		Saturday Peak Period	
		Delay (s)	LoS	Delay (s)	LoS
Edinburgh Rd/Smidmore St	Signals	18	B	41	C
Edinburgh Access	Priority	6	A	7	A
Edinburgh Rd/Sydney Steel Rd	Roundabout	14	A	16	B

The results indicate that either option would have similar satisfactory performance with acceptable levels of service and delays.

In addition to the above overall results, Table 4 presents traffic operation statistics for the two right turn movements (into the proposed development and Smidmore Street) on Edinburgh Road.

Table 4: Edinburgh Rd Right Turn Movement Results

	Thursday Peak Period		Saturday Peak Period	
	Delay (s)	95th Percentile Queue (m)	Delay (s)	95th Percentile Queue (m)
Combined Turn Bay				
Right Turn into Smidmore St	17	11	23	28
Right turn into Edinburgh Access	5	4	6	11
Separate Turn Bays (Roads and Maritime)				
Right Turn into Smidmore St	17	11	23	28
Right turn into Edinburgh Access	5	2	5	6

The results indicate that the two right turn movements would experience minimal delays and queues in all peak periods assessed across both options. The combined turn lane has a total storage length of 49m. As such, there would be sufficient storage area to accommodate the 95th percentile queue length indicated above. The expected queues therefore would not overflow into the adjacent lane.

The above analysis results indicate there is little difference in traffic efficiency between the two options and that both options would operate with satisfactory performance.

Finally, it is noted that approval is not sought for a turn right out access permitting vehicles to turn right out from the proposed development site into Edinburgh Road. This movement can be accommodated at the proposed roundabout at Sydney Steel Road.

3.2 Traffic Generation Rates

The comment made is as follow:

> *There is the potential that the traffic assessment has underestimated the future traffic generated by the additional floor area. The assessment has adopted a reduction factor to the relevant traffic generation rates as identified within the Guide to Traffic Generating Developments (RTA, 2002) based on comparisons of surveys of the existing development and the rates within the guide.*
>
> *However, it is inconclusive as to whether this reduction factor would be applicable post development. As such, the assessment should be undertaken based on the relevant traffic generation rate of 4.6 trips and 6.1 per 100 sqm GLFA for the respective Thursday and Saturday peak hours, which are the standard guideline rates.*

In response to Roads and Maritime's comments, TTPP confirms that the traffic assessment has adopted a traffic generation rate of 6.1 vehicle trips per 100m^2 for the Saturday peak hour as suggested by Roads and Maritime. In relation to the Thursday peak period, TTPP considers Roads and Maritime's suggested rate of 4.6 vehicle trips per hour per 100m^2 is not appropriate in this case for the following reasons.

Traffic generation surveys conducted in June 2017 at the existing Centre indicate that the Centre generates traffic at a rate of 5.0 vehicle trips per hour per 100m^2 during the Thursday peak period. It is noted that the traffic study that accompanied the original development application also conducted traffic generation surveys at the Centre in 2010. The 2010 surveys revealed that the Centre generates traffic at a rate of 4.5 vehicle trips per hour per 100m^2. As such, the traffic generation rates from both surveys are consistent.

The existing Centre has a gross leasable floor area of 22,900m^2. Based on Roads and Maritime's guideline, a generic centre with similar floor area would be generating traffic at a rate of 5.9 vehicle trips per hour per100m^2 during the Thursday evening peak period.

Comparing the surveyed rate (5.0 vehicle trips per hour per 100m^2) with Roads and Maritime's generic rate (5.9 vehicle trips per hour per 100m^2), the Centre generates traffic at approximately 85 per cent of the generic rate for the Thursday peak period.

This is consistent with anecdotal evidence suggesting that Thursday evening shopping is not as popular as it used to be when the original Roads and Maritime retail traffic generation surveys were conducted back in the 1970s and 1990s. This is especially the case when trading hours for shopping centres (in particular for supermarkets) were heavily deregulated in the late 1990s resulting in supermarkets being permitted by laws to operate late into weekday evenings with most centres trading up to 10:00pm and some major centres trading to 12midnight.

It is further noted that Roads and Maritime provided updated traffic generation rate for a generic centre with 20,000m^2 to 30,000m^2 floor area in their technical direction TDT 2013/04a based on traffic surveys conducted in 2011. On the surface, the original rate (5.9 vehicle trips per hour per 100m^2) appears to be consistent with the 2011 updated rate (6.0 vehicle trips per hour per 100m^2). However, the 2011 updated rate was based on surveys conducted at a single centre, namely Warriewood Square.

Warriewood Square is a subregional shopping centre located in Sydney's northern beaches suburb of Warriewood. It has a gross leasable floor area of 22,100m^2. Examining aerial images of both the Warriewood Square and Marrickville Metro sites, the following comments can be made:

- Warriewood Square is not located near heavy rail services whereas Marrickville Metro is located approximately 900m walking distance to St Peters Railway Station,
- Warriewood Square is isolated from nearby residential areas, whereas Marrickville Metro is generally surrounded by residential dwellings where residents can easily access the Centre with a short stroll, and
- Warriewood Square has no competitors located within close proximity to the centre (besides local neighbourhood shopping areas such as Mona Vale) as such it has a relatively larger catchment area where local residents have no choice other than to shop at Warriewood Square whereas at Marrickville Metro there are numerous competitors located in close proximity (within 3.5km) such as Broadway Shopping

Centre, Marrickville retail precinct (along Marrickville Road and Illawarra Road which contains some 15,000m² of retail floor area providing an extended range of retail offers) and 17 supermarkets (Woolworths, Coles and IGA) in close proximity.

The above observations suggest that Marrickville Metro can be reasonably expected to generate traffic at a lower rate than Warriewood Square. As such, the updated rate of 6.0 vehicle trips per hour per 100m² in TDT 2013/04a may be unique to Warriewood only and is therefore not applicable to Marrickville Metro.

In addition, it is noted that the traffic assessment conducted by consultant Halcrow that accompanied the original 2010 application was approved by Roads and Maritime (known as RTA at the time). The Halcrow assessment adopted a similar methodology to estimate the development traffic as follow:

- traffic survey results indicate that the Centre generates traffic at rates of 4.5 and 7.1 vehicle trips per hour per 100m² for Thursday and Saturday peak periods respectively,
- the surveyed rates were then compared with RTA's suggested rates of 5.9 and 7.5 vehicle trips per hour per 100m² for Thursday and Saturday peak periods respectively for a 20,000m² to 30,000m² centre,
- the surveys indicate the Centre generates traffic at approximately 77 and 95 per cent of the RTA rates,
- on this basis, future development traffic was estimated by adopting the RTA's suggested rates for a 30,000m² or more retail centre (4.6 and 6.1 vehicle trips per hour per 100m² for Thursday and Saturday peak periods respectively) with the scale factors as determined above applied to the RTA rates, and
- essentially the Halcrow assessment adopted traffic generation rates of 3.5 vehicle trips per hour per 100m² (being 4.6 x 0.77) for Thursday peak period and 5.8 vehicle trips per hour per 100m² (being 6.1 x 0.95) for Saturday peak period.

By way of comparison, TTPP has adopted a scale factor 0.84 for the Thursday evening peak period compared to Halcrow scale factor of 0.77 for the same peak period. That is, TTPP's assessment has reduced the future estimated development traffic by 16 per cent whereas the Halcrow assessment reduced future estimated development traffic by 23 per cent.

It is further noted that the proposed development was first granted planning approval in 2012. Prior to approval being granted, the application was referred to both RTA and Inner West Council (formerly Marrickville Council). The application went through an extensive review process including an independent review of traffic and parking aspects of the proposed development. Submissions from Roads and Maritime and Council to the DPE did not raise any objection to the traffic assessment methodology and assumptions including how the future traffic generation was estimated. Furthermore, Roads and Maritime provided their concurrence for the proposed development based on the traffic generation methodology discussed above.

In the light of the above discussion, TTPP confirms that the adopted traffic generation rates continue to provide a robust traffic assessment of the proposed development.

3.3 Modelling Files

The comment made is as follow:

> *It is requested that the Applicant submit all electronic files used for both the SIDRA and VISSIM models, which has been utilised to derive the current findings and any further findings, for review by Roads and Maritime. This information will be used to verify that the modelling has been undertaken in accordance with standard Roads and Maritime practices and guidelines.*

The electronic modelling files have been provided to Roads and Maritime Services under a separate cover.

4 Submission from Inner West Council

4.1 Speed Reduction

The comment made is as follow:

> *The proposed one-way treatment in Smidmore Street from Murray Street to the entrance to the carpark of the existing centre will consist of road narrowing and it is envisaged that there will be an increase in pedestrian activity within this area. A speed reduction to this section of road should be considered as part of the proposal. It is noted that the amended proposal includes the retention of the existing loading dock on the northern side of Smidmore Street (adjacent to the entry/exit ramp to carpark). This is not supported by Council officers as this area will be a high pedestrian activity area. The vehicular movements demonstrated in the amended proposal indicate that vehicles will have to mount onto the footpath before reaching the loading dock. A proposed pedestrian crossing is also located in very close proximity to this loading dock and the interaction between delivery trucks/vans/cars and pedestrians are a concern. The loading dock access will also conflict with the operation of the roundabout at the entry/exit gate to the carpark. It is recommended that the loading dock be removed from this location (as per original proposal) to improve safety for motorists and pedestrians;*

In the relation to the suggested speed reduction, it is noted that the one-way section of Smidmore is proposed as a shared zone where vehicle and pedestrian traffic share the same road space. Drivers are required by law to give way to pedestrians. The legal speed limit within a shared zone is 10km/h.

In addition, a shared zone is a Roads and Maritime sanctioned speed management device. As such, Roads and Maritime require any proposed shared zones to comply with the criteria

set out for a shared zone. These are presented in Table 5 together with some commentaries addressing each criterion.

Table 5: Roads and Maritime Site Criteria for Shared Zones

Features	Shared Zone	TTPP Comments	Compliance with Roads and Maritime Criteria
Current traffic flows	≤ 100 vehicles per hour and ≤ 1000 vehicles per day	Future traffic on the relevant section of Smidmore Street has been estimated to be less than 100 vph – see notes below.	Yes
Current speed limit	≤ 50 km/h	Existing road on which the proposed shared zone would be located has a default speed of 50km/hr.	Yes
Length of proposed Shared Zone	≤ 400 metres	Proposed length of shared zone is approximately 50m.	Yes
Current speed limit of adjoining roads	≤ 50 km/h	Adjoining roads have a default speed of 50km/hr.	Yes
Current carriageway width	minimum trafficable width of 2.8 metres	The proposed shared zone would have a minimum width of 4.0m (subject to further design refinement).	Yes
Route access	must not be located along bus routes or heavy vehicle routes except delivery or garbage trucks	Proposed shared zone is not located on a bus or heavy vehicle route. However, it would be used by service vehicles making deliveries to the shopping centre which will be restricted to hours between 5:00am and 11:00am when pedestrian flows would be minimal.	Yes
Streets with narrow or no footpaths	where pedestrians are forced to use the road	Existing road on which the proposed shared zone would be located has standard width footpaths on either side of the road. These would be integrated into the proposed shared zone such that the proposed shared zone does not have any separate designated pedestrian area/footpath.	Yes
Kerbs	kerbs must be removed unless excepted by the RMS (See Section 4)	Existing road on which the proposed shared zone would be located has kerbs which will be removed.	Yes

Notes:
In relation to future traffic flows on the proposed one-way section of Smidmore Street, it is noted that Smidmore Street currently operates as a two-way road with the existing westbound flow of approximately 136 vph during the busiest peak period.
The proposal involves converting the eastern section of Smidmore Street into a one-way road permitting traffic flows in the westbound direction only. The Smidmore Street shopping centre access will also be reconfigured to permit left-in/right out traffic movements only. The bus stops on this section of Smidmore Street will also be relocated to

Edinburgh Road. Kerbside parking on this section of Smidmore Street will also be removed with only a small number of drop-off spaces retained.
Following the completion of the proposal, the proposed reconfiguration of Smidmore Street and the shopping centre access would result in Smidmore Street eastbound traffic including traffic from the shopping centre being redirected elsewhere. It is expected that a majority of existing westbound traffic would transfer to an alternative route due to the traffic calming nature of the proposed shared zone (predominantly associated with the travel speed being reduced to 10km/h). As such, the only remaining traffic on the eastern section of Smidmore Street would be traffic flows in the westbound direction generated by the retained kerbside drop off spaces and the existing shopping centre loading dock.
It is further noted that service vehicles accessing the existing Smidmore Street loading dock would be restricted to the hours between 5:00am and 11:00am when pedestrian flows are expected to be minimal.
On this basis, the future traffic flows on Smidmore Street would be reduced significantly to well below the 100 vph limit indicated in the Roads and Maritime criteria.

As such, the proposed one-way section of Smidmore Street would in a very low speed environment.

The issue relating to the existing loading dock is being addressed by consultant Cardno separately. Swept path analysis requested by Council will also be provided by Cardno.

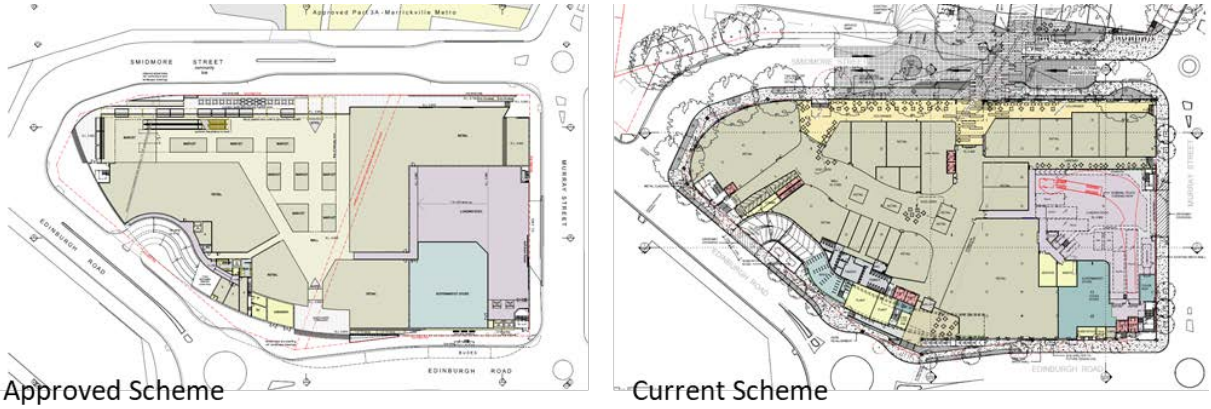
4.2 Proposed Access Arrangements

The comment made is as follow:

> *Stage 1B (southern block) only consists of one entry/exit to proposed new carpark. This access is from Edinburgh Road. It would be preferable for this entry/exit gate to be further east along Edinburgh Road to avoid any conflicts with the operation of the signalised intersection of Smidmore Street / Edinburgh Road.*
>
> *Consideration of an additional entry/exit to this new carpark is warranted (on safety grounds) given the number of car parking spaces it is to contain. If not feasible, an alternate solution would be to provide vehicular access from one carpark to the other carpark (Stage 1B link to Stage 2). For emergency purposes it is appropriate that vehicular access from at least two entry/exit points be provided*

In response, TTPP notes that the proposed access arrangement in the current application is consistent with the approved development in terms of location and number of access points as shown in Figure 4.

Figure 4: Comparison of Approved and Proposed Access Arrangements



The proposed access location was approved at approximately halfway on Edinburgh Road between Smidmore Street and Sydney Steel Road. The current scheme does not propose to alter this approved location. It is also noted that the proposed access location is generally in the same location as that of the existing industrial use that is being displaced by the proposed development.

The approved development includes one access point located off Edinburgh Road. This will continue to be the case in the current scheme.

Finally, it is noted that the design is significantly well advanced consistent with the approved development as such there is no opportunity to undertake what is considered as substantial modifications to critical elements of the proposed development.

4.3 Access Configuration

The comment made is as follow:

> *The proposed entry/exit gate to the new carpark via Edinburgh Road should only be 'left in' and 'left out' for vehicles and a median strip be installed along the centreline of Edinburgh Road between Smidmore Street and Sydney Steel Road (median strip along centre of road was previously considered as part of the proposal). If right turn movements into the new carpark are required, a more comprehensive study to justify that this is required will need to be provided. Queuing at the entry to this carpark access on Edinburgh Road may be conflicting with motorists who also want to turn right into Smidmore Street;*

The traffic assessment that accompanied the S75W application was supported by comprehensive traffic modelling involving the development of microsimulation traffic models using both the Vissim and Aimsum modelling platforms as well as SIDRA modelling of the local intersections. The modelling of the future development cases included outputs from the 2016 and 2026 strategic traffic models. They were used to establish the changes in background traffic growth in the study area. The strategic model includes the traffic effects from the proposed WestConnex Project currently under construction by the NSW State Government.

In relation to queuing at the car park entry, as reported in the preceding sections, the proposed right turn access on Edinburgh Road would not create any adverse traffic impacts to the operation of the local road network. As reported in Table 4 above, the expected queues on Edinburgh Road would be accommodated within the proposed turn bay without overflowing into the adjacent through lane.

4.4 Queue into New Development

The comment made is as follows:

> *In general, a more comprehensive study on queuing into the new development from all entry/exit points (both existing and newly proposed) to the carparks should be provided. In particular, the roundabout entry/exit gate to carpark in Smidmore Street*

In response, TTPP notes that the new development includes only one proposed entry/exit point which is located on Edinburgh Road. The traffic assessment that accompanied the S75W application included a queuing assessment of the proposed Edinburgh Road access point. The queuing assessment was conducted using traffic queueing theory based on probability principles for a multichannel queuing system as described in the Transportation and Traffic Engineering Handbook (ITE), together with the Australian Standard service rate for boom gates.

The analysis reported in the S75W application found that the design of the proposed access/ramp arrangement has sufficient queue storage capacity (approximately nine vehicles long) to accommodate the expected 50th percentile (approximately two vehicles) and 95th percentile queue (approximately six vehicles). The queue storage capacity also complies with Australian Standard requirement in that it has a maximum vertical grade of 10 per cent.

It is further noted that the assessment conservatively adopted a boom gate capacity of 300 vph per lane based on the use of automatic ticket machine. However, it is likely that the system would be equipped with number plate recognition technology will be able to process vehicles quicker than an automatic ticket machine which would reduce queuing of vehicles to a minimal.

4.5 Parking Provisions

The comment made is as follows:

> *Additional detail on the parking provisions for the proposal should be highly considered with reference to Council's current DCP. It is noted that the amended proposal includes the introduction of paid parking to the carparks with a timed period of free parking. The proposal states that the employees to businesses within the shopping centre will not be exempt and therefore this will have an impact on the on-street parking demand in nearby streets. It is considered that adequate staff parking should be provided on-site*

and/or staff be exempt from the paid parking restrictions. Demonstration of how this will be managed by centre management and staff will need to be provided.

In relation to Council's comment on the proposed parking provision to be provided with consideration to Council DCP, it is noted that the proposed parking provision will continue to be provided at a rate of 4.1 car parking spaces per 100m^2 GLA as per the approval.

AMP Capital Investors (AMPCI) proposes to introduce paid parking in line with Marrickville Metro's competitors including Ashfield Mall and Broadway Shopping Centre. The system is expected to include a ticketless car park control system incorporating number plate recognition technology.

The fee structure has yet to be determined, but it is expected that it would be consistent with other centres. It is also expected that the customers would be provided with up to three hours free parking. It is also intended that entry into the car park after 6:00pm would be free of charge.

In addition, AMPCI is committed to provided parking for retail staff and tenants on site. Retail staff and tenants will be permitted to park anywhere in the car park, but will be encouraged to park in the upper levels. Retail staff/tenants will also be offered concessions on their parking fees.

Attachment Two contains a management plan from AMPCI outlining their proposal for controlled parking system at Marrickville Metro.

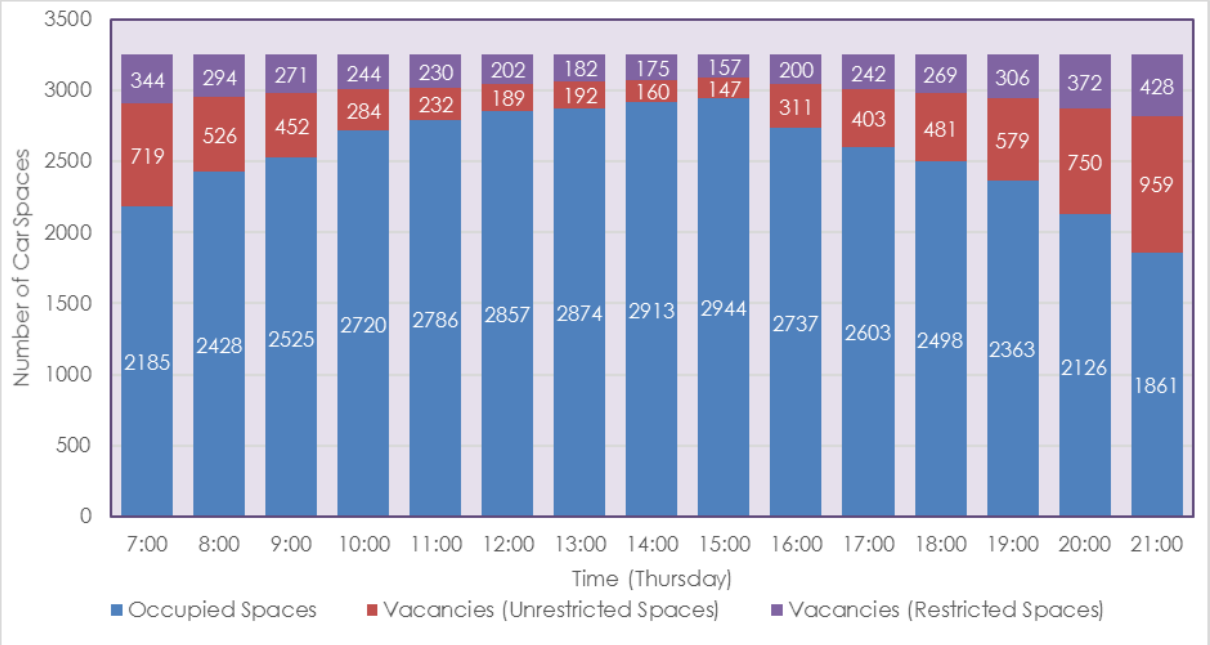
Separately, parking occupancy of on-street parking spaces within 800m distance of the Marrickville Metro Shopping Centre was carried out on Thursday 22 February 2018 and Saturday 24 February 2018. The areas where the parking occupancy surveys were conducted are shown in Figure 5.

The survey involved a patrol of all on-street car parking spaces at hourly intervals from 7:00am to 9:00pm on Thursday and from 9:00am to 5:00pm on Saturday recording the occupied parking spaces together with the parking restrictions.

The results are presented in Figure 6 and Figure 7 for Thursday and Saturday respectively.

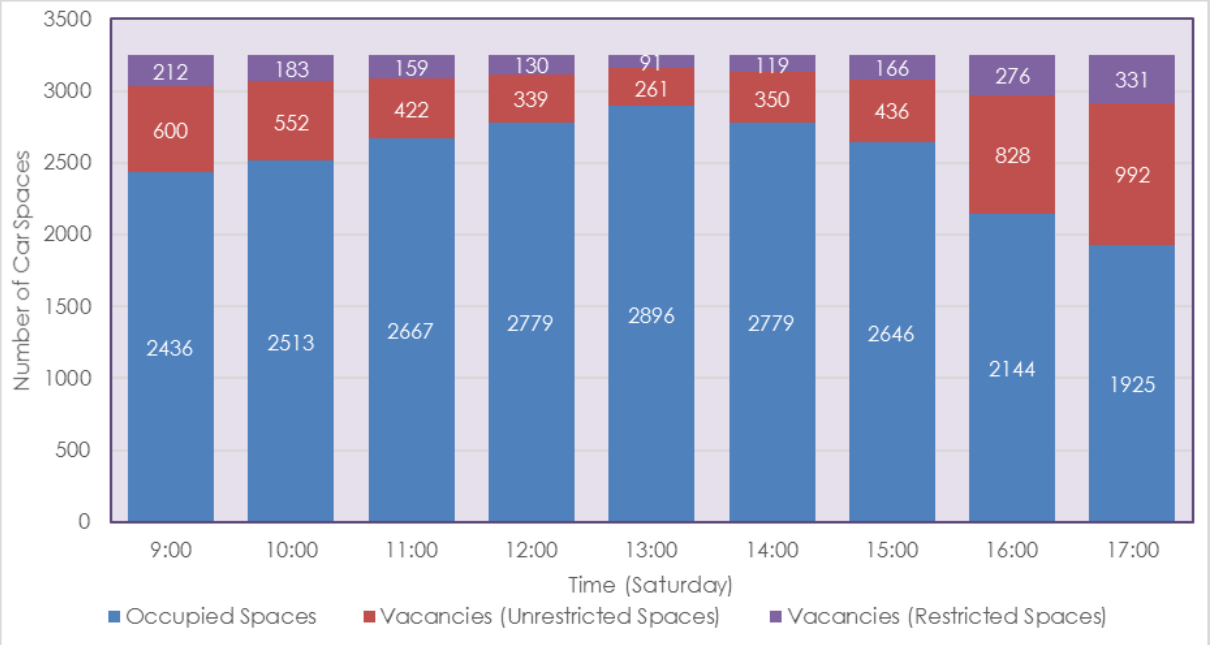
Figure 5: Parking Occupancy Survey Locations

Figure 6: Parking Survey Results – Thursday



Note: Unrestricted spaces are any kerbside parking spaces that can be parked for more than four hours.

Figure 7: Parking Survey Results – Saturday



Note: Unrestricted spaces are any kerbside parking spaces that can be parked for more than four hours.

From the above parking occupancy survey results, there is a spare parking capacity of approximately 304 parking spaces comprising 157 restricted parking spaces (4P parking or less) and 147 unrestricted parking spaces (greater than 4P).

It is noted that AMPCI is committed to provide parking for retail staff/tenants on site as indicated previously. Retail staff/tenants would be offered concessions on the applicable parking fees as at most other centres.

It is further noted that based on a recent AMPCI survey, AMPCI has estimated that in the future the maximum total number of employees on site at any given time would be in the order of 510 (comprising 360 employees at the existing Centre and 150 employees in the new building). AMPCI also estimated that of these 510 employees, approximately 200 employees would park on site even with paid parking introduced. The remaining employees would use other modes of transport to access the site e.g. public transport, car pooling, walk/cycle.

There could be some employees who would choose to drive to the site and park on the streets. However, the number of employees expected to do so would be minimal and is unlikely to adversely affect parking availability on nearby streets especially when retail staff/tenants will be permitted to park anywhere within the car park with concession parking rates.

4.6 Loss of On-Street Car Parking Spaces

The comment made is as follow:

> *Clarification is required on the existing on-street parking surrounding the development site and whether any parking spaces are lost as a result of the proposal.*

TTPP notes that the approved development would result in a loss of approximately 26 on-street parking spaces on Edinburgh Road due to the proposed car park access, Sydney Streel Road proposed roundabout and the relocation of the bus stop to Edinburgh Road. The approved development would also result in the loss of an additional 16 on-street space on Smidmore Street due to the proposed pedestrian crossing. Therefore, the approved development would result in a loss of 42 kerbside car parking spaces in total. This is shown in Figure 8.

The revised scheme in the current application would continue to result in the same number of kerbside parking spaces being removed (at the same location).

In addition, the revised scheme would also result in an additional loss of 17 kerbside car parking spaces as follow:

- Smidmore Street – six kerbside parking spaces on the southern side of Smidmore Road due to changes in the street design of Smidmore Street
- Edinburg Road – six kerbside parking spaces on the southern side of Edinburgh Road due to the proposed right turn access, and
- Edgeware Road – five kerbside parking spaces on eastern side of Edgeware Road between Alice Street and Victoria Road during the Saturday periods.

Figure 8 shows the locations of the kerbside parking loss for the approved scheme as well as the current application.

Figure 8: Kerbside Parking Loss

In relation to the kerbside parking loss on Edgeware Road, it is noted that weekday parking ban is already in place for the Edgeware Street kerbside parking spaces.

As such, the total kerbside parking loss for the current application is 59 kerbside car parking spaces (of which 42 spaces were approved in the previous approval).

In addition, it is noted that the occupancy parking surveys indicate there is a spare parking capacity of approximately 304 parking spaces within 800m walking distance of the Centre. As such, there is sufficient on-street parking spaces to accommodate the anticipated parking loss.

5 Submission from Transport for NSW

5.1 Construction Traffic Management Plan

The comment made is as follow:

> *The submitted construction traffic management plan provides no description in regard to the proposed road works along Smidmore Street.*
>
> *The applicant should be conditioned to prepare a detailed Construction Pedestrian and Traffic Management Plan (CPTMP) for approval prior to carrying out any activities on-site;*
>
> *The detailed CPTMP needs to address the impact during demolition and construction phases, particularly outlining the proposed staging of works and associated arrangement on Smidmore Street when the current bus stop will be unavailable for use;*
>
> *The relevant Conditions of Consent, notably items B14, B15 and B25, as stipulated in the Concept Approval of the proposed development must be retained.*

TTPP agrees that a condition be included in the approval requiring an updated CPTMP be prepared and submitted to the relevant consent authorities for approval.

The CPTMP will also consider the effects of construction activities on bus operation in the vicinity of the Marrickville Metro site.

TTPP also agrees for relevant conditions in the Concept Approval to be retained, however the following conditions are no longer relevant and should therefore be deleted:

- Condition B15(a) concrete median in Smidmore Street to prevent right turns into and out of the proposed car park access ramp
- Condition B15(d) detailed design of the bus terminal in Smidmore Street
- Condition B15(g) the installation of pedestrian traffic signals and a crossing on Smidmore Street between the pedestrian entrances of the two shopping centre buildings, and the provision of proposed signage, line marking, speed zones and other traffic management

in the proposed Smidmore Street Shared zone and Victoria Road in accordance with Conditions B16 and B17

- Condition B15 (h) no parking restrictions to cover the afternoon peak and Saturday morning peak at the following locations:
  - northbound approach of Edgeware Road to the intersection with Alice Street and Llewellyn Street (distance of 100 metres);
  - southbound approach of Edgeware Road to the intersection with Alice Street
  - and Llewellyn Street (distance of 50 metres); and
  - westbound approach Alice Street to the intersection with Edgeware Road and Llewellyn Street (distance of 50 metres).

6 Responses to Public Submissions

TTPP provides below responses to some of the traffic and parking related submissions from the local residents.

6.1 Marrickville Resident #1:

I am concerned principally by the transport impact and noise impact of both the development and ongoing operation of the centre.

The Edgeware Road and Victoria Road intersection is already a dangerous entry/exit point for the complex, and insufficient safety provisions are being made for the increase in traffic.

The impact of other major activities in the area are not considered adequately

Extra traffic being funnelled along Edgeware Road from West Connex

Extra traffic generated on Edinburgh and Edgeware Road from the building and operation of the Sydney Metro Dive Site.

The extension of operating hours should not be at the cost of local residents, so after 7pm traffic should not enter via residential streets and should be directed via Edinburgh Road"

TTPP's response is as follows.

In relation to the impact at the Edgeware Road intersection with Victoria Road, it is noted that Roads and Maritime Services uses an intersection performance measure called the level of service (LoS) to identify how well or efficient an intersection is operating under prevailing traffic conditions. The level of service ranges from LoS A indicating good performance to LoS E/F indicating unsatisfactory operation. Typically, in urban condition like that at the Marrickville Metro site, the long term desirable level of service is LoS D.

The traffic assessment conducted by TTPP includes the intersection of Edgeware Red with Victoria Road. For the Thursday evening peak period, the traffic modelling results indicate that this intersection would continue to operate with acceptable level of performance at LoS C in the future. For the Saturday peak period, at present under existing traffic condition the intersection operates with LoS E. To improve the performance of this intersection in the future, it is proposed to remove on-street parking on Edgeware Street (in the southbound direction between Alice Street and Victoria Road). As such, the level of service for this intersection is expected to improve to LoS D for the Saturday peak period. In addition, it is noted that consent condition from the original approval requires the right turn traffic movement from Victoria Road to Edgeware Road be prohibited. This would further improve the future ongoing operation of this intersection.

In relation to traffic impact associated with the WestConnex Project including construction activities, it is beyond the scope of a single private development (i.e. Marrickville Metro) to consider the traffic implications of such a large scale project like the WestConnex Project. The WestConnex Project is a $16.8 billion infrastructure project linking two existing motorways with complex traffic and transport problems to be resolved on a regional level as well as at a local level. Under these circumstances, it is usual practice for the proponents of large scale projects like the WestConnex scheme to conduct a holistic transport and traffic study (if they haven't already) including all known local developments like the proposed expansion of Marrickville Metro examining all aspects of transport issues at both regional and local levels.

In relation to the proposed extension of the operating hours, it is noted that traffic conditions after 7:00pm would not be as busy as during the peak periods. As such, it would not be necessary for customer traffic to use residential streets to access the Centre.

6.2 Marrickville Resident #2:

For pedestrians the intersections below are currently dangerous and difficult to cross:

- *Alice/Llewellyn Streets and Edgeware Road*
- *Victoria Road and Edgeware Road.*

The traffic modelling in the environmental impact statement provides significant differences in the impacts for Alice/Llewellyn Streets than it does for Victoria Rd/Edgeware Road and yet the intersections are only meters apart. I express concern that each intersection is being considered independently and not taking into account its effect on the next intersection.

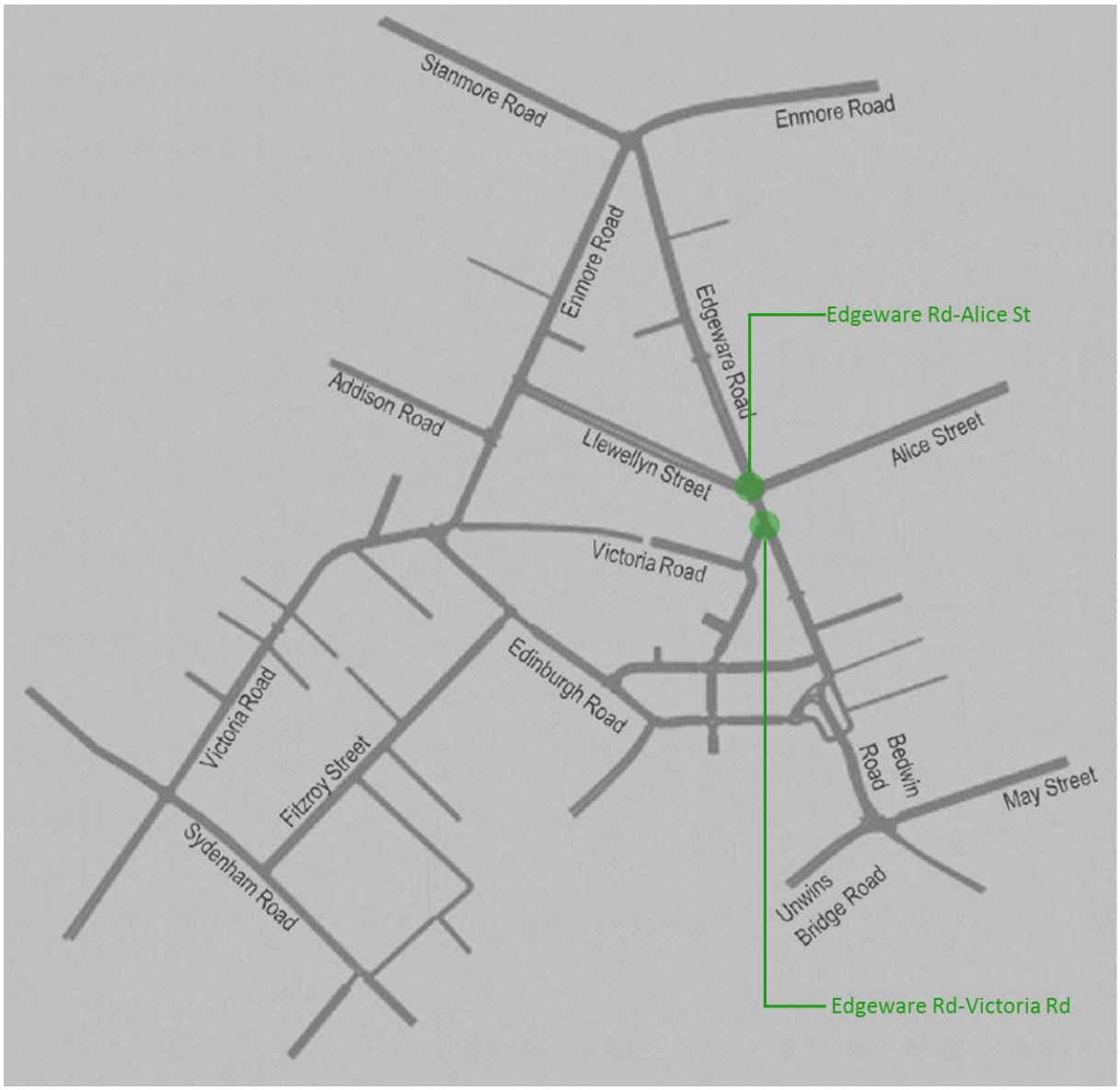
The crossing at Victoria Rd on Edgeware Rd crosses 2 lanes of traffic in each direction. This is a significant danger to pedestrians who are reliant sometimes on making visual contact with 4 cars at the one time in order to cross the road. The proposals do not appear to offer and alternative to this and the proposal to remove Edgeware Rd parking on the east side at busy periods will likely increase the vehicle demands to make the turn into Victoria Rd quickly."

TTPP's response is as follows.

TTPP confirms that the intersection modelling has not been conducted in isolation. Intersection modelling to assess the traffic effects of the proposed development has been undertaken through the development of a micro-simulation traffic model of the local road network on the traffic modelling platform known as Vissim. The Vissim model takes into account the downstream and upstream traffic effects at each intersection.

The traffic model covers the road network surrounding the proposed development site and it includes the two Edgeware Road intersections at Alice Street/Llewellyn Street and Edgeware Road named in the above submission. The coverage of the traffic model is discussed in the traffic assessment report. The modelled area reproduced from the report is reiterated here as Figure 9. Figure 9 also shows the locations of the two intersections named in the submission.

Figure 9: Traffic Modelled Area



It is noted that prior to the development of the microsimulation traffic model, TTPP consulted Roads and Maritime Services on the traffic modelling methodology and assumptions to be adopted for the development of the traffic model. Roads and Maritime Services approved the modelling methodology including the development of the Vissim model and the proposed modelled road network shown in Figure 9.

The above submission suggests there are "*significant differences in the impacts*" of the two intersections. TTPP assumes this is in reference to the difference in the level of service rather the traffic impacts or effects of the proposed development at these intersections.

In this regard, it is noted that the difference in level of service is predominantly due to the Alice Street intersection operating as a signalised intersection, whereas the Victoria Road intersection is operating as a priority controlled intersection.

Roads and Maritime Services requires the level of service for signalised and priority controlled intersections to be reported differently. For signalised intersections, Roads and Maritime Services requires the level of service to be determined based on the average delays of all traffic movements entering the intersection. For priority controlled intersections, Roads and Maritime Services requires the level of service to be determined based on the traffic delays for the worst traffic movements typically the right turn movement from the side road. This methodology reflects the fact that at signalised intersection all traffic movements share the green signal display time hence will require to be stopped when the respective traffic signal display turned red therefore will experience traffic delays travelling through the intersection. At priority controlled intersections, only the traffic movements to/from the side street are required to give way to the main traffic stream hence only these movements would experience traffic delays.

The above Roads and Maritime Services' required reporting method of level of service for different intersection types can result in some differences in the level of service between signalised and priority controlled intersections even if they are located adjacent to each other.

In relation to the pedestrians having to cross multiple number of lanes across Victoria Road, TTPP notes that the Victoria Road crossing is provided as a marked foot (zebra) crossing. Figure 10 shows an aerial imagery of the intersection including the zebra crossing.

Figure 10: Victoria Rd at Edgeware St

Aerial Image Source: NearMap

In NSW, a zebra crossing is not permitted on multi-lane roads with more than one travel lane in each direction. From Figure 10, it can be seen that Victoria Road is line marked to permit one lane of traffic flow in each direction only, although adjacent to Edgeware Road the travel lanes are quite wide. The reason for the extra width is probably related to the turning circle requirement for large vehicles.

In addition, vehicles turning into Victoria Road from Edgeware Road would do so at one vehicle at a time as the right turn movement by law is required to give-way to left turn movement at priority controlled intersection.

As such, it is unlikely that pedestrians using the zebra crossing would be reliant to make visual contact with four vehicles at the same time. In addition, it is also the law that drivers turning left or right at an intersection must give way to any pedestrian crossing the road the driver is entering (with or without the presence of a zebra crossing).

It is also noted there is adequate sight distance at the crossing, and therefore it is unlikely to result in any pedestrian safety concerns relating to sight line.

In addition, the proposed removal of kerbside parking on the eastern of Edgeware Street during the weekend peak periods is unlikely to result in any adverse impacts at this intersection, but instead improve the operation of this intersection. Furthermore, it is noted the parking ban is currently in place on weekdays.

We trust the above is to your satisfaction. Should you have any queries regarding the above or require further information, please do not hesitate to contact the undersigned on 8437 7800.

Yours sincerely,

Michael Lee
Associate Director

Attachment One

Crash Data

The Transport Planning Partnership
Suite 402, 22 Atchison Street
ST LEONARDS NSW 2065

Transport for NSW

Help

Crashes by RUM Code group - Blacktown

Select your LGA:
Blacktown

Reporting year
All

Degree of crash
All

Fatigue involved in crash
All

Speeding involved in crash
All

Public Holidays *
All

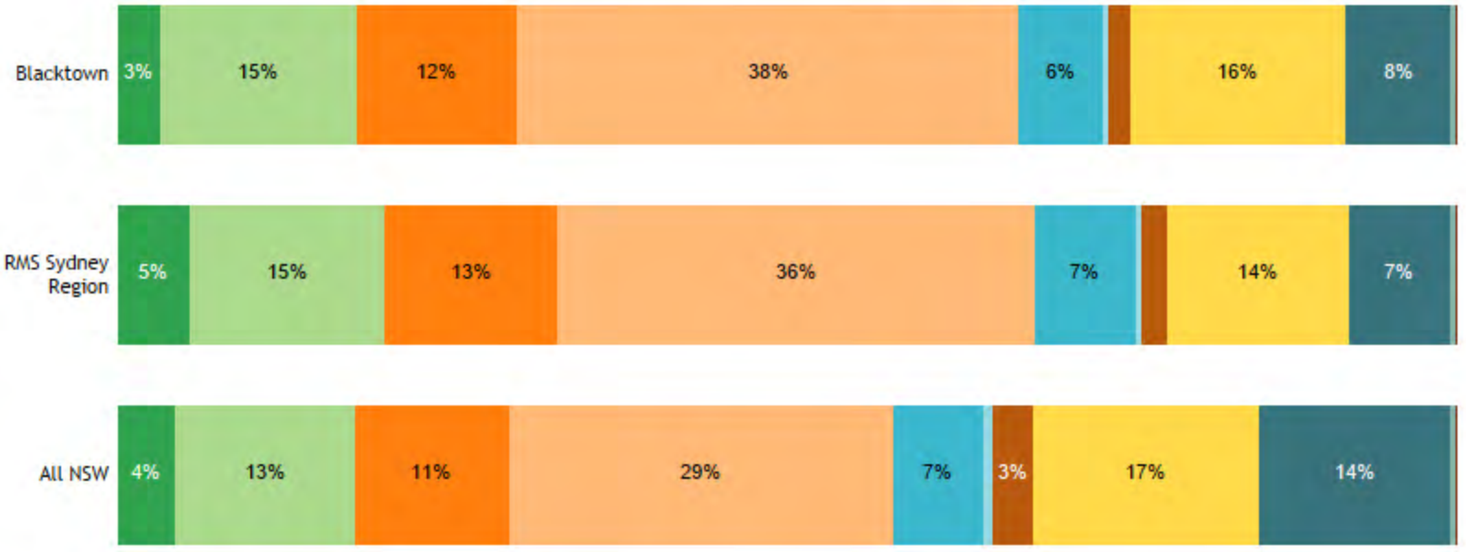
School Holidays *
All

Day of week
All

Time of day
All

Road classification
All

* Number of included days may differ between years.

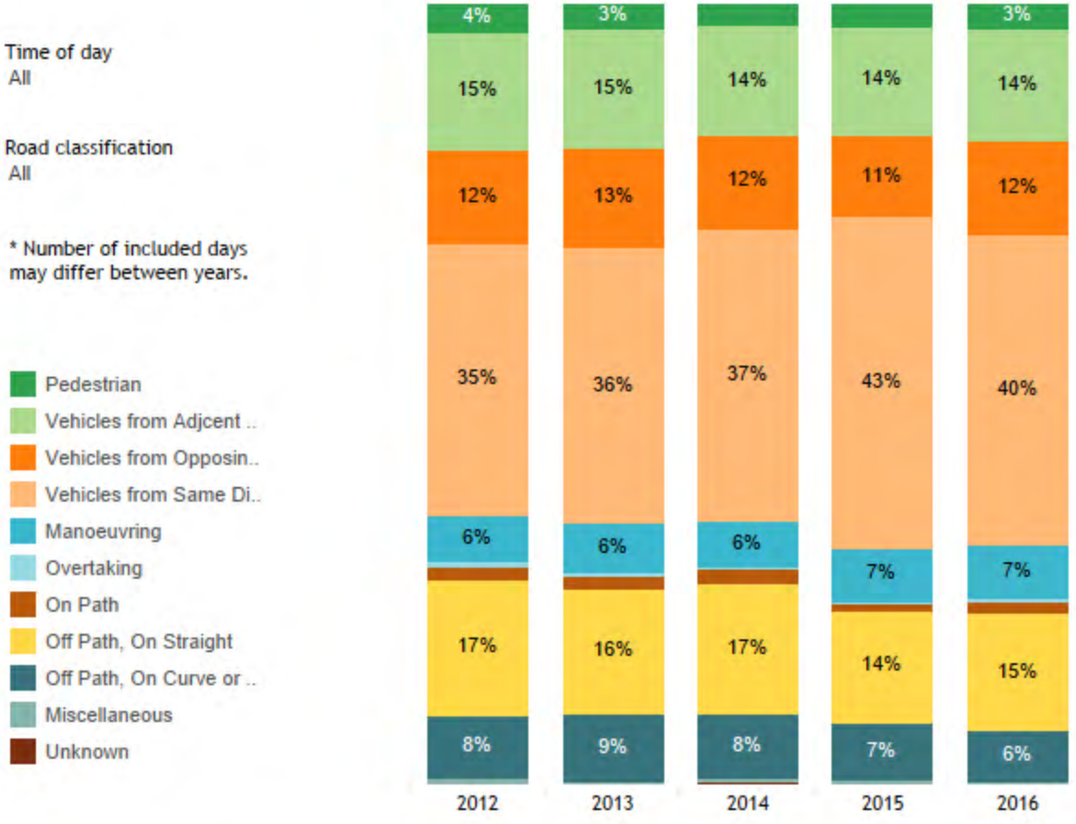


Display By
RUM Code group

DATA AVAILABILITY
Finalised data is available for the 5 year period 2012 to 2016

Data refreshed date: 21 November 2017

Trend Graph - Blacktown



Trend Table - Blacktown

	2012	2013	2014	2015	2016	Total
Pedestrian	62	54	44	34	34	228
Vehicles from Adjcent Dire..	256	254	236	154	150	1,050
Vehicles from Opposing Dir..	203	209	195	118	125	850
Vehicles from Same Direction	589	589	615	477	416	2,686
Manoeuvring	100	105	99	74	70	448
Overtaking	9	6	4	5	6	30
On Path	31	29	32	10	13	115
Off Path, On Straight	291	266	274	159	159	1,149
Off Path, On Curve or Tur..	137	143	135	83	67	565
Miscellaneous	11	4	8	4	3	30
Unknown	1	0	4	1	0	6
Total	1,690	1,659	1,646	1,119	1,043	7,157

Crashes by RUM Code group - Ku-ring-gai

Help

Select your LGA:
Ku-ring-gai

Reporting year
All

Degree of crash
All

Fatigue involved in crash
All

Speeding involved in crash
All

Public Holidays *
All

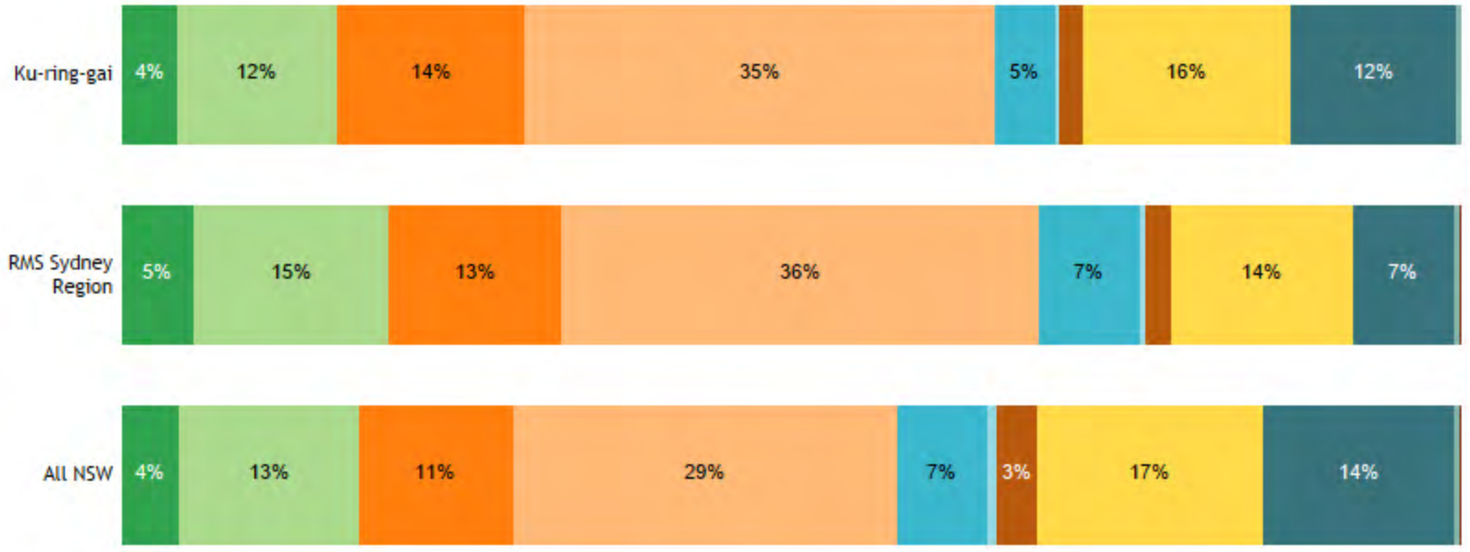
School Holidays *
All

Day of week
All

Time of day
All

Road classification
All

* Number of included days may differ between years.

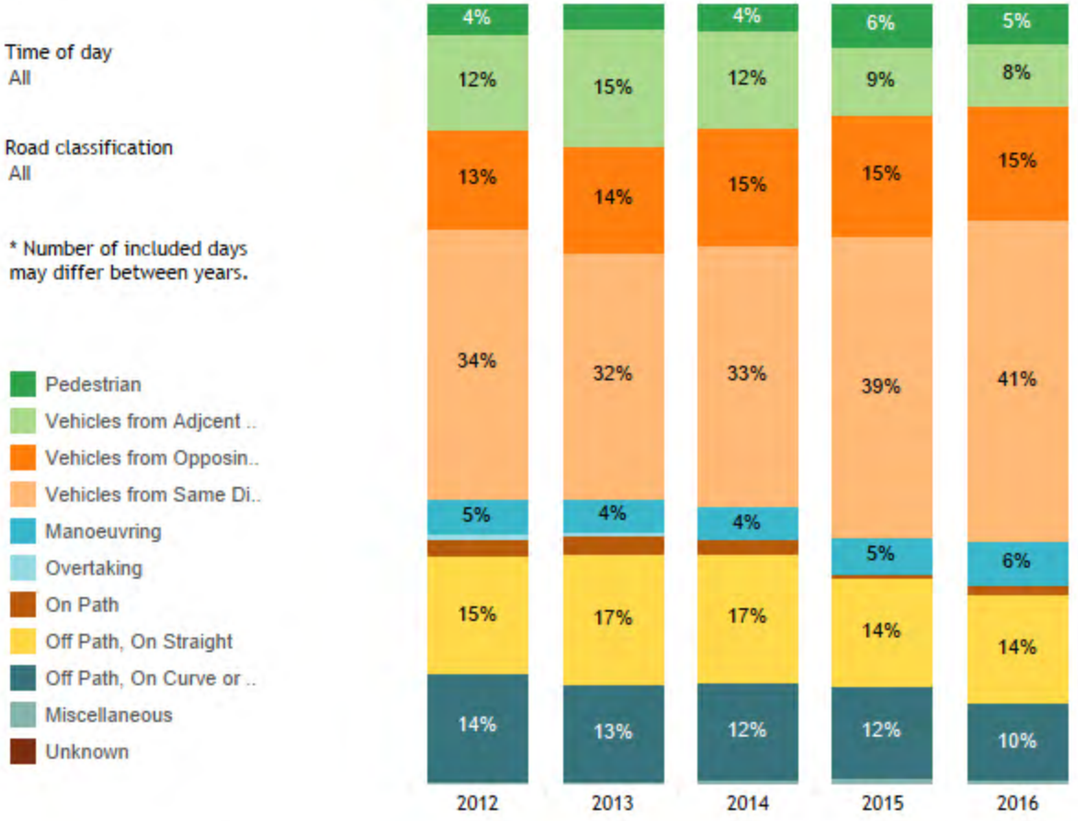


Display By
RUM Code group

DATA AVAILABILITY
Finalised data is available for the 5 year period 2012 to 2016

Data refreshed date: 21 November 2017

Trend Graph - Ku-ring-gai



Trend Table - Ku-ring-gai

	2012	2013	2014	2015	2016	Total
Pedestrian	23	16	16	17	14	86
Vehicles from Adjcent Direction	71	76	56	26	21	250
Vehicles from Opposing Direction	73	68	68	46	39	294
Vehicles from Same Direction	199	158	151	116	111	735
Manoeuvring	26	21	20	14	15	96
Overtaking	4	2	0	0	0	6
On Path	12	12	8	1	3	36
Off Path, On Straight	88	83	75	42	37	325
Off Path, On Curve or Turning	79	63	56	35	27	260
Miscellaneous	2	1	2	2	1	8
Total	577	500	452	299	268	2,096

Crashes by RUM Code group - Willoughby

Help

Select your LGA:
Willoughby

Reporting year
All

Degree of crash
All

Fatigue involved in crash
All

Speeding involved in crash
All

Public Holidays *
All

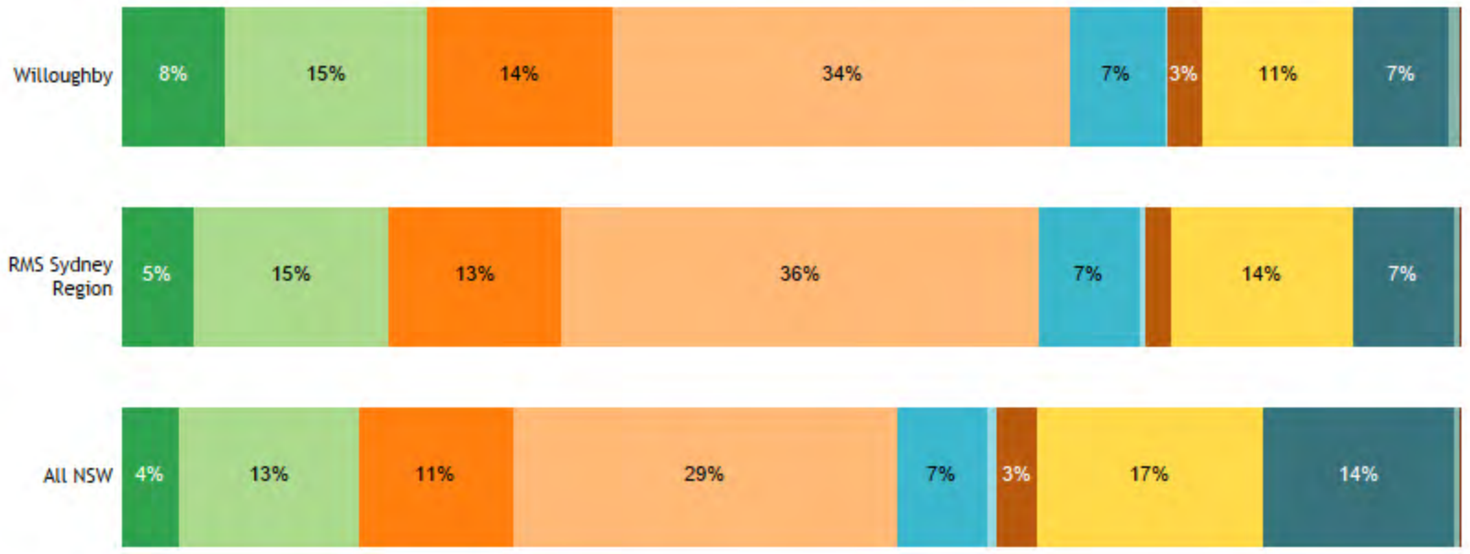
School Holidays *
All

Day of week
All

Time of day
All

Road classification
All

* Number of included days may differ between years.

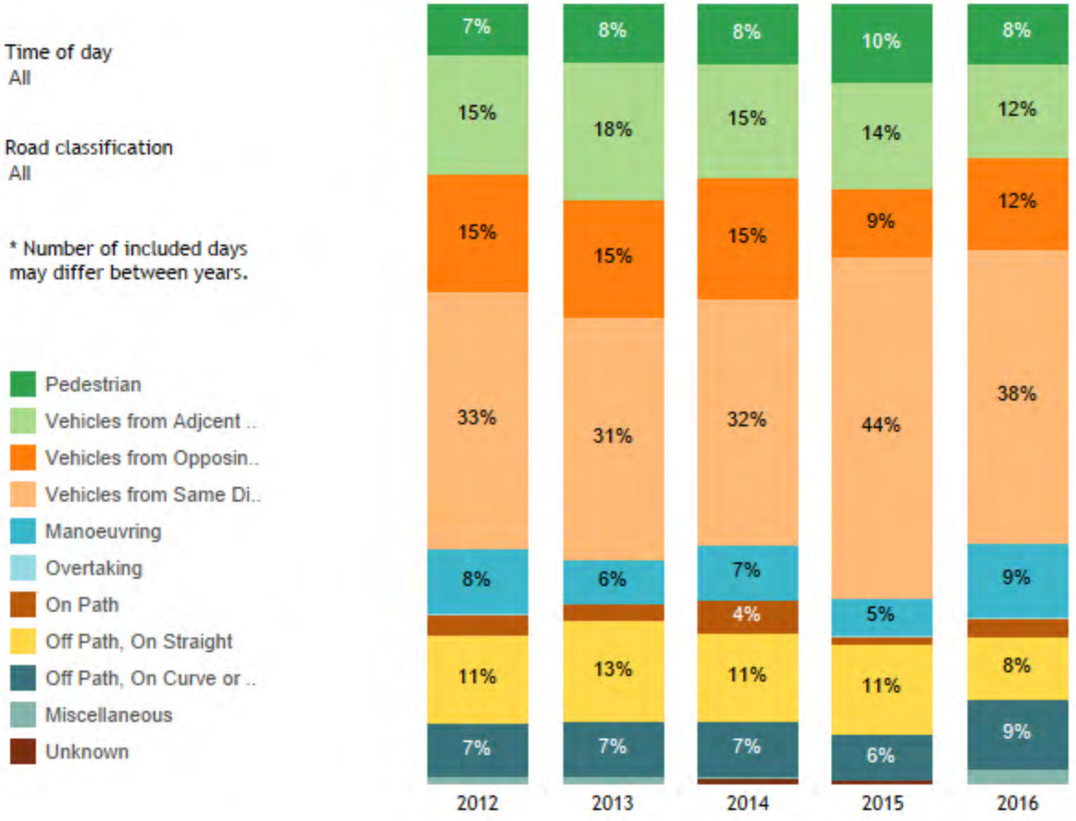


Display By
RUM Code group

DATA AVAILABILITY
Finalised data is available for the 5 year period 2012 to 2016

Data refreshed date: 21 November 2017

Trend Graph - Willoughby



Trend Table - Willoughby

	2012	2013	2014	2015	2016	Total
Pedestrian	28	30	26	22	17	123
Vehicles from Adjcent Dire..	65	70	49	30	27	241
Vehicles from Opposing Dir..	65	60	52	19	26	222
Vehicles from Same Direction	140	123	106	96	84	549
Manoeuvring	36	22	24	10	21	113
Overtaking	1	0	0	1	1	3
On Path	11	9	14	2	5	41
Off Path, On Straight	48	51	38	25	18	180
Off Path, On Curve or Tur..	29	28	24	13	20	114
Miscellaneous	4	4	1	0	4	13
Unknown	0	0	2	1	0	3
Total	427	397	336	219	223	1,602

Crashes by RUM Code group - Woollahra

Help

Select your LGA:
Woollahra

Reporting year
All

Degree of crash
All

Fatigue involved in crash
All

Speeding involved in crash
All

Public Holidays *
All

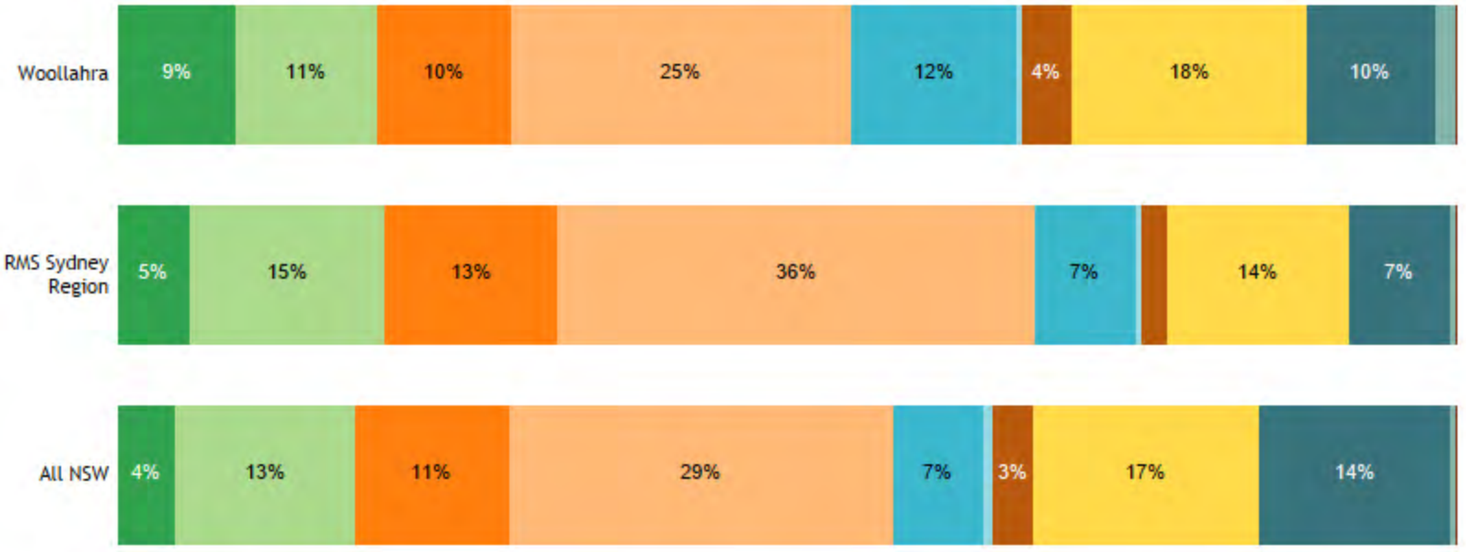
School Holidays *
All

Day of week
All

Time of day
All

Road classification
All

* Number of included days may differ between years.

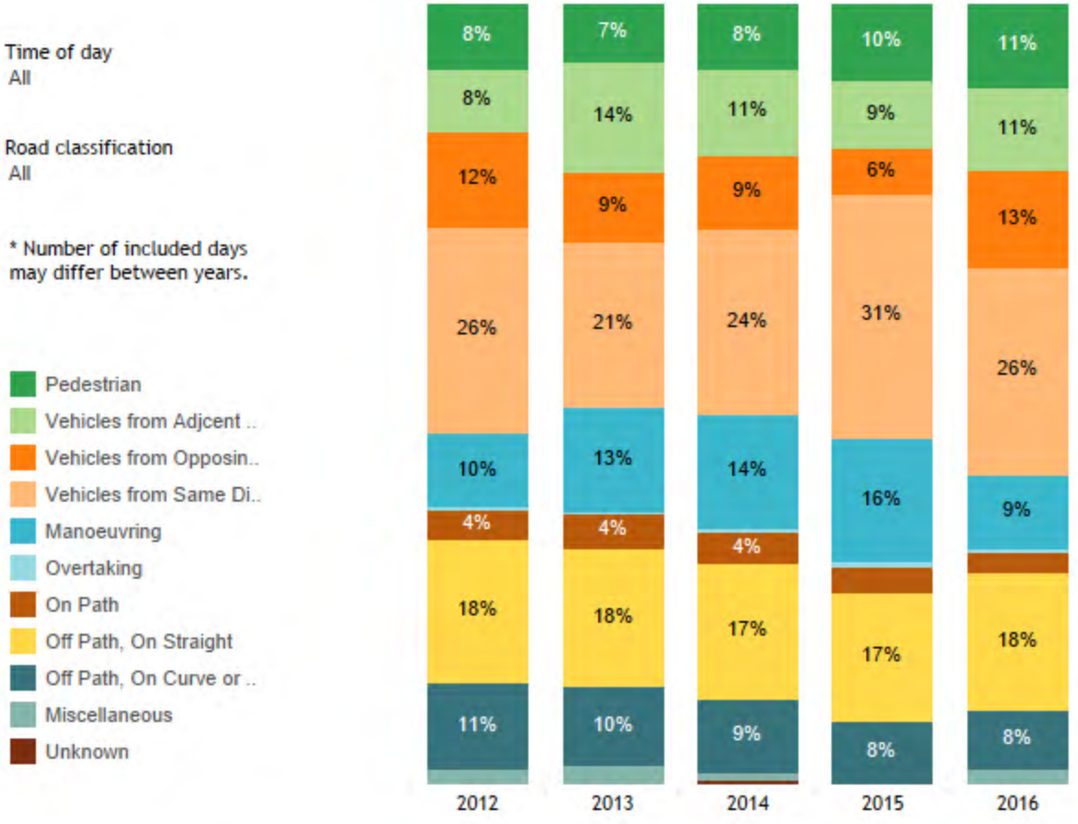


Display By
RUM Code group

DATA AVAILABILITY
Finalised data is available for the 5 year period 2012 to 2016

Data refreshed date: 21 November 2017

Trend Graph - Woollahra



Trend Table - Woollahra

	2012	2013	2014	2015	2016	Total
Pedestrian	22	19	17	15	17	90
Vehicles from Adjcent Dire..	21	36	22	13	17	109
Vehicles from Opposing Dir..	32	23	19	9	20	103
Vehicles from Same Direction	69	54	48	47	42	260
Manoeuvring	25	34	29	24	15	127
Overtaking	1	1	1	1	1	5
On Path	10	11	8	5	4	38
Off Path, On Straight	48	45	35	25	28	181
Off Path, On Curve or Tur..	29	26	19	12	12	98
Miscellaneous	5	6	2	0	3	16
Unknown	0	0	1	0	0	1
Total	262	255	201	151	159	1,028

Attachment Two

AMPCI Controlled Parking Management Plan

'AMP Capital Investors Real Estate Pty Ltd
ABN 32 063 858 711

> Marrickville Metro

Controlled Parking Management Plan

MAY 2018

Marrickville Metro – Controlled Parking Management Plan

This paper has been prepared for NSW Department of Planning and Environment Marrickville in support of the S75W submission (MP 09_0191 MOD 6).

Index

1. Overview of the Controlled Parking System

This paper outlines a proposal to introduce a ticketless car park control system to Marrickville Metro. The system will incorporate a license plate recognition system, which would be installed at each of the entry and exit points to the car park. The system would operate together with automated pay machines, positioned at common access points to the centre, to validate and pay for parking if required.

Upon arrival, customers will drive directly into the car park with the car park control system registering the license plate of the vehicle.

On leaving the car park, if the customer has stayed less than the period of free parking, then they are not required to go to an automated pay machine.

The license plate recognition system will note that the customer has stayed within the free time period and open the boom gate for the customer to exit. If the customer has stayed longer than the period of free parking, then they have the choice of either pre-paying for parking at an automated pay machine prior to exiting the car park or completing the transaction at the exit to the car park, via the use of a credit/debit card.

The proposed car park control system will include ticketless entry control lanes and ticketless exit control lanes.

The introduction of the ticketless car park control system is designed to:

- improve access arrangements for customers, without the need for entry controls and parking tickets;
- ensure a turnover of shopper parking spaces;
- improve car park efficiency and internal circulation;
- improve parking utilisation;
- enhance security;
- discourage long-stay parking;
- Control staff/tenant parking.
- Encourage the use of alternate modes of transport.

Appendix A contains design plans of the system to indicate the location of pay stations and boom gates.

Appendix B shows the carpark circulation plans to accommodate boom gates.

2. Convenient Communication of Parking Durations

As customers do not receive a printed ticket on entry, the system provides them with their elapsed time in a number of ways.

- All entry points have a digital clock to confirm time of entry.

- At all automated pay machines located at major access points to the centre, you can enter your license plate and it will confirm your elapsed time.
- At all centre directories located in the centre thoroughfares you can enter your license plate and it will confirm your elapsed time.

3. Convenient Payment methods

If the customer's visit to the car park is within the free parking period provided, the customer can proceed directly to the exit gate. The parking system will recognise their licence plate number and the boom gate will automatically open.

If the customer's visit to the car park is over the free parking provided, they can head to one of the many automated pay machines, enter their licence plate number and pay the parking fee. All pay stations are equipped with cash payment methods and a compliant EMV credit card unit which allows customers to pay by inserting their credit card or by using tap as you go.

Alternatively, the customer can drive to the exit gate where the system will recognise their license plate and request any outstanding payment. The customer can make the payment via the compliant EMV credit card unit through inserting their credit card or by using tap as you go.

Additionally, customers also have the option to register a credit card against their vehicle through our ticketless parking website for any parking fee to be automatically deducted from their credit card.

4. Re-Entry Management

The ticketless car park control system has a turnaround prevention system that discourages long stay parkers from exiting the car park and re-entering immediately as they could in a traditional ticketed parking environment. It does this by combining the parking time accumulated in both trips and bases the charge on that consolidated time.

To allow genuine customers to visit the centre multiple times in a day the system has a programmable re-entry time – that is the minimum time the vehicle must be out of the centre before it will re-start the allowed free parking time.

The re-entry time will be set at 30 minutes initially, but can be altered by the management to respond to localised operating conditions if required. This re-entry period is advised to customers through the terms of conditions, and on the website of the centre.

5. Hours of Operation

The ticketless car park control system will operate whilst ever the shopping centre is open, however it is intended for parking to be free for customers with entry after 6pm.

All exit and pay machine devices are equipped with intercom functionality that connects then to our Operations Centre where staff will assist with their enquiry.

6. Customer Safety

The Ticketless carpark control system provides CCTV surveillance monitoring system to all devices and can be used to document vehicle accidents, vandalism, adverse behaviour such as 'sneak throughs' and to assist police with any vehicles of interest.

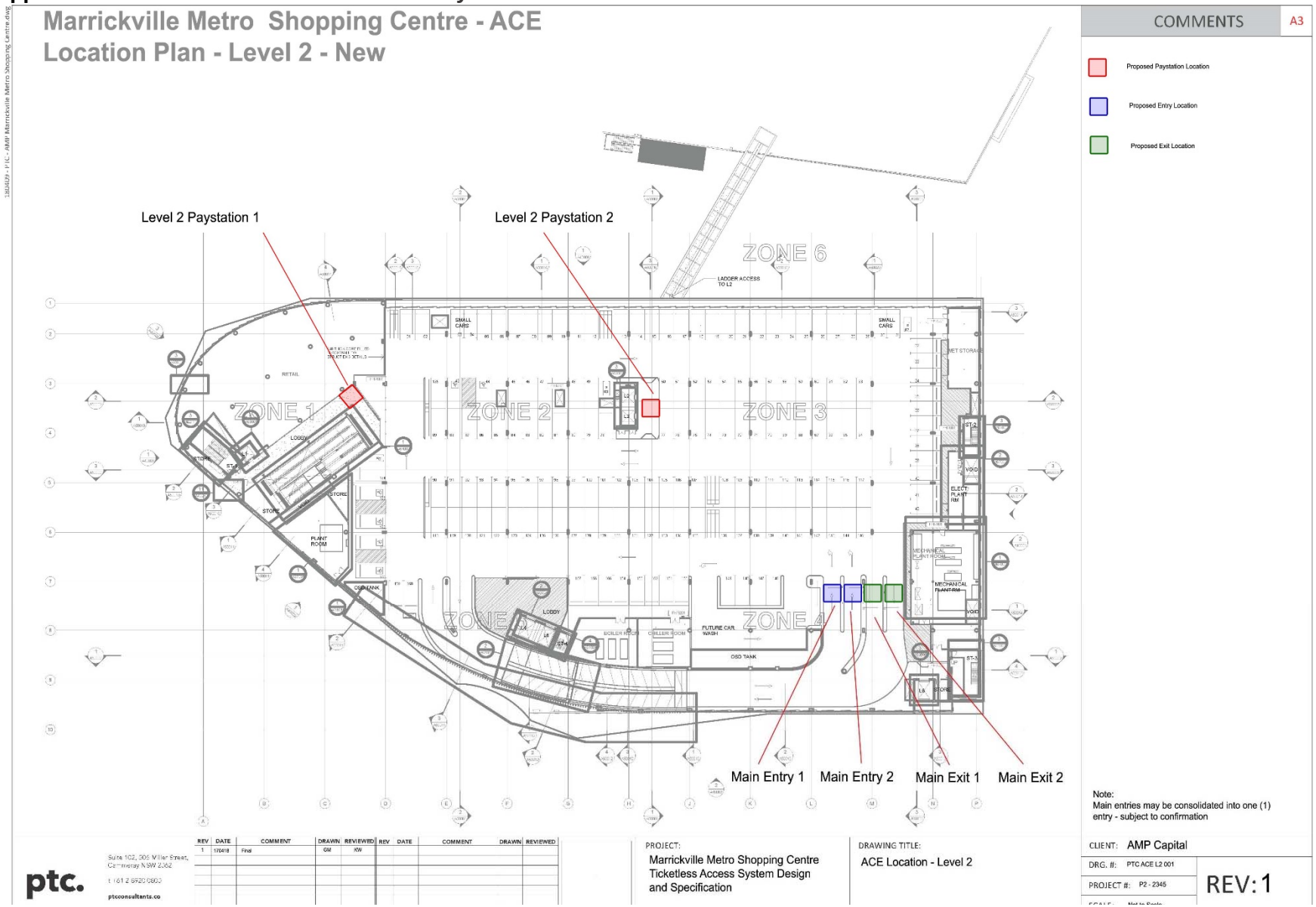
Within the control system, there is a functionality to add problematic vehicles to a notification list which will alert the site team once this vehicle enters the property.

7. Retail Staff Parking

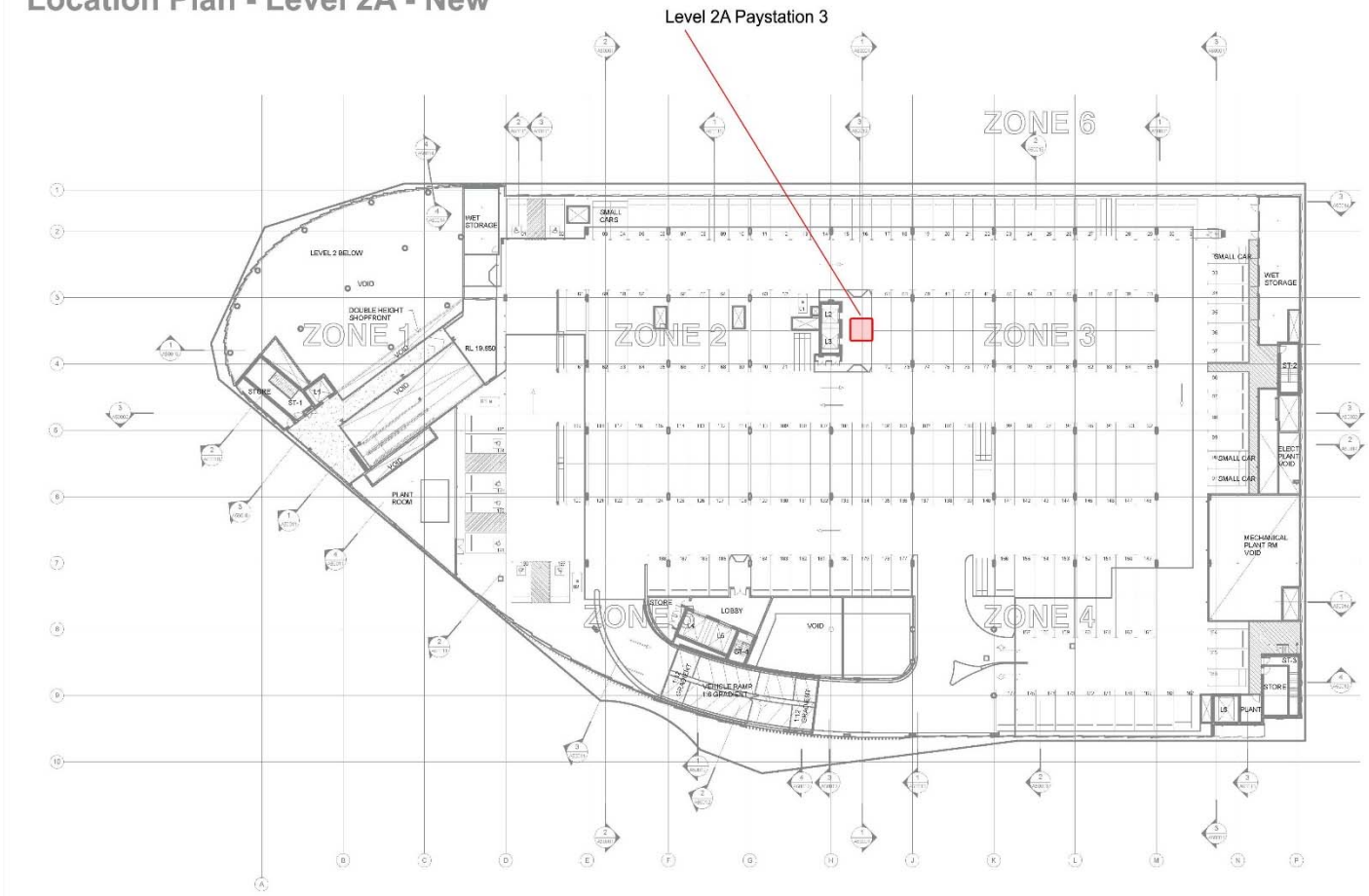
Retail staff/tenants will be permitted to park anywhere in the carpark but will be encouraged to park in the upper levels.

Retail staff/tenants must register their details online to gain access to their discounted rate. AMP staff can assist any retail staff/tenants who do not have access to the internet.

Appendix A Location of Boom Gates and Pay Stations



Marrickville Metro Shopping Centre - ACE
Location Plan - Level 2A - New



COMMENTS A3

Proposed Paystation Location

REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
1	170418	Final	GM	KW					

ptc.
Suite 102, 300 Miller Street,
Cammeray NSW 2062
t: +61 2 8920 0800
ptcconsultants.co

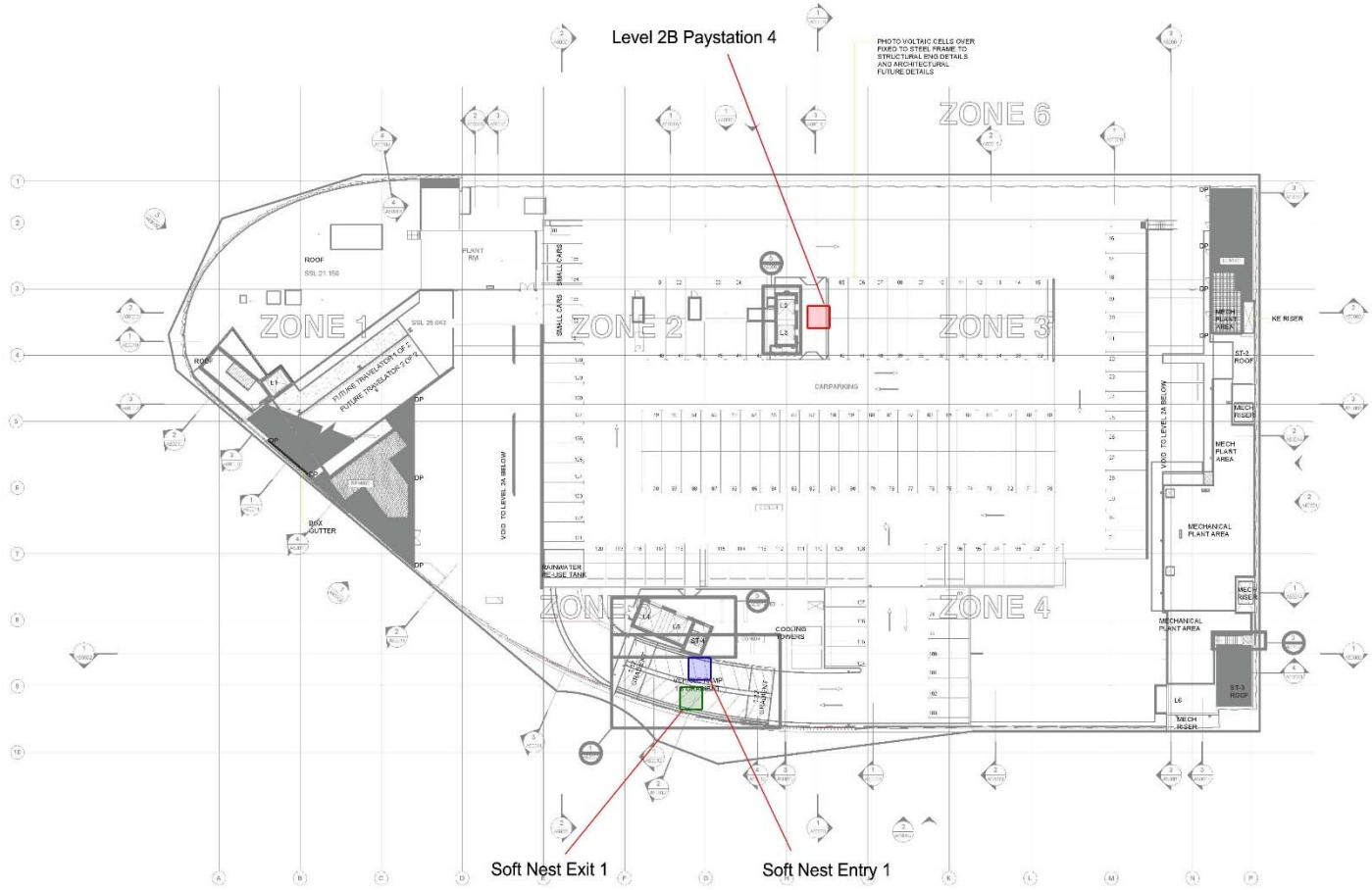
PROJECT:
Marrickville Metro Shopping Centre Ticketless Access System Design and Specification

DRAWING TITLE:
ACE Location - Level 2A

CLIENT: AMP Capital
DRG. #: PTC PGS L2A 001
PROJECT #: P2 - 2345
SCALE: Not to Scale

REV: 1

Marrickville Metro Shopping Centre - ACE
Location Plan - Level 2B - New



COMMENTS A3

- Proposed Paystation Location
- Proposed Entry Location
- Proposed Exit Location

ptc.
Suite 102, 200 Miller Street, Cammeray NSW 2062
t: +61 2 8920 0800
ptcconsultants.co

REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
1	170419	Final	GM	KW					

PROJECT:
Marrickville Metro Shopping Centre Ticketless Access System Design and Specification

DRAWING TITLE:
ACE Location - Level 2B

CLIENT: AMP Capital
DRG. #: PTC ACE L2B 001
PROJECT #: P2 - 2345
SCALE: Not to Scale

REV: 1

Marrickville Metro Shopping Centre - ACE Location - Existing Rooftop

COMMENTS A3

Proposed Paystation Location

Proposed Entry Location

REV	DATE	COMMENT	DRAWN	REVIEWED
1	170418	Final	GM	KW

ptc.
Suite 102, 308 Miller Street,
Cammeray NSW 2062
t: +61 2 8920 0800
ptcconsultants.co

PROJECT:
Marrickville Metro Shopping Centre Parking Guidance System Design and Specification

DRAWING TITLE:
Existing Centre - Rooftop Car Park and Partial Mezzanine Level

CLIENT: AMP Capital
DRG. #: PTC PGS EXIST 001
PROJECT #: P2 - 2345
SCALE: Not to Scale

REV: 1

Appendix B Carpark Circulation Plans to Accommodate Boom Gates

AMP CAPITAL

Hames Sharley

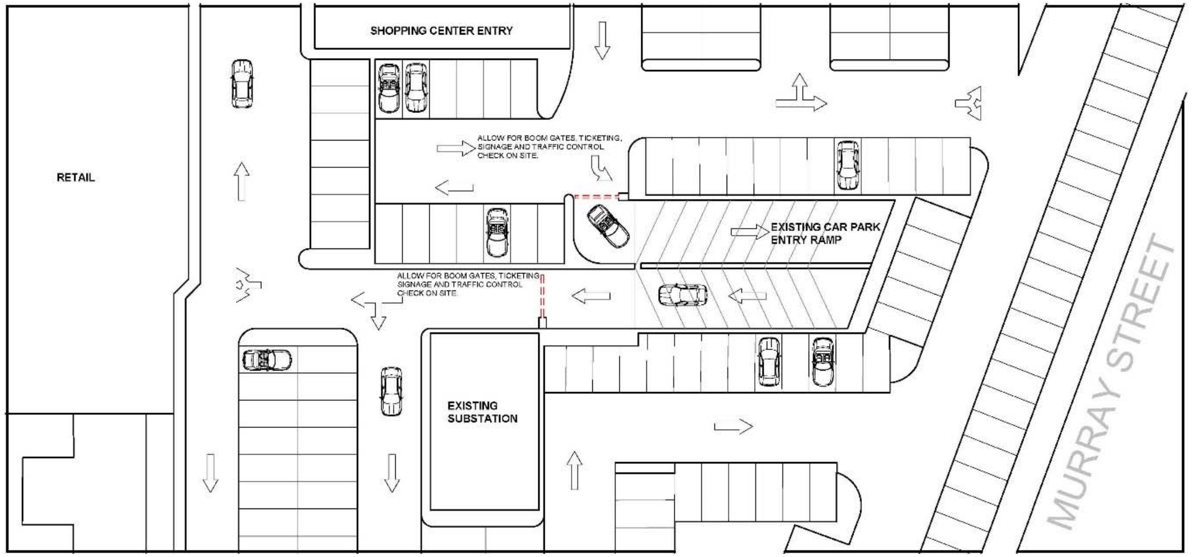
MARRICKVILLE METRO REDEVELOPMENT
34 VICTORIA ROAD MARRICKVILLE NSW 2204

EXISTING OVERALL SITE PLAN

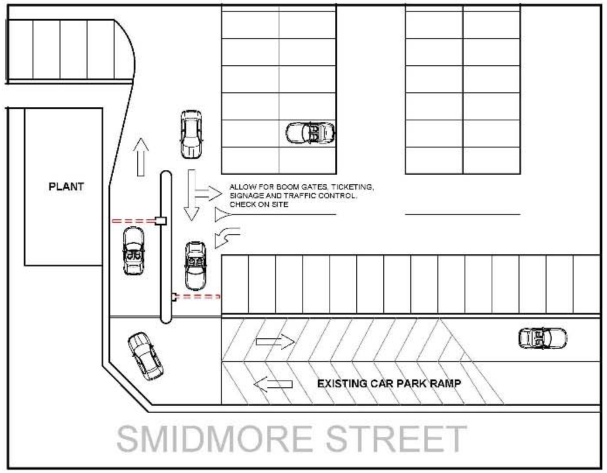
Author | Checker | 1 : 1

50980 | AR-1BEB-A10001

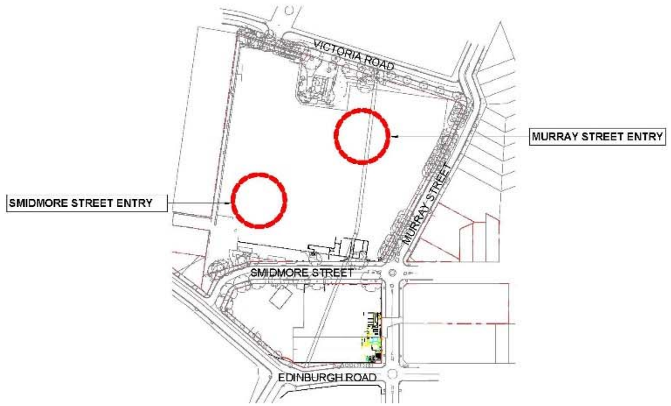
FOR TENDER



2 CARPARK ENTRY MURRAY STREET
1 : 200



3 CARPARK ENTRY SMIDMORE STREET
1 : 200



1 LOCATION PLAN
1 : 2000

DISCLAIMER:

THIS PARTIALLY COMPLETE DESIGN DOCUMENT IS INTENDED TO CONVEY THE DESIGN INTENT AND CANNOT BE READ IN ISOLATION. REFER ALL SCHEDULES, SPECIFICATIONS, ENGINEERING AND [illegible] PERIOD FOR CONSTRUCTION DOCUMENTATION.

Rev	Date	Initial	Description
B	20/02/18	HS	ISSUE FOR INFORMATION
A	15/12/17	HS	80% DOCUMENTATION ISSUE

Client

AMP CAPITAL

Hames Sharley

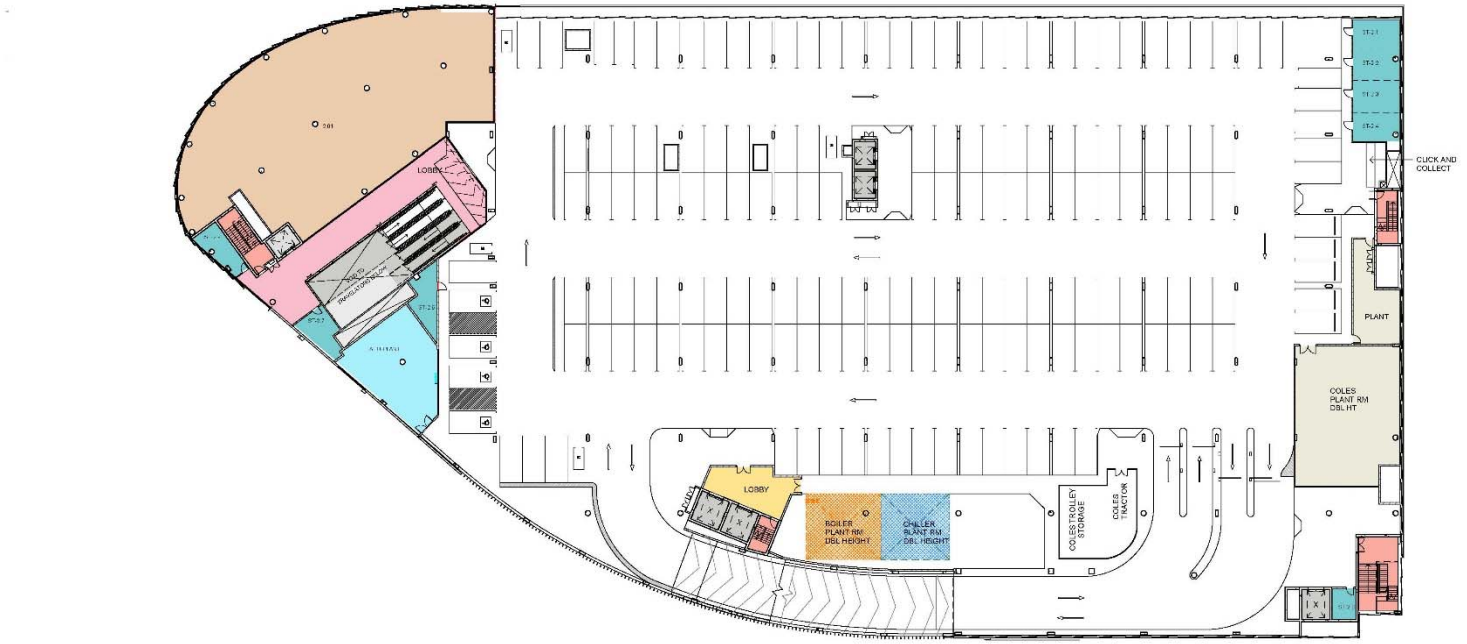
Project
MARRICKVILLE METRO REDEVELOPMENT
34 VICTORIA ROAD MARRICKVILLE NSW 2204

Drawing Title
EXISTING CENTER PARKING OVERALL PLAN

Drawn By	Checked By	Scale @ A1
PB	SA	As indicated

Project No.	Drawing No.	Revision
50980	AR-1BEB-A10003	B

Status
FOR TENDER



1 MLP LEVEL 2
1 : 250

LEGEND

- AHU PLANT
- SERVICES
- GYM
- STORE
- LOBBY
- VERTICAL TRANSPORT

AMP CAPITAL

Hames Sharley

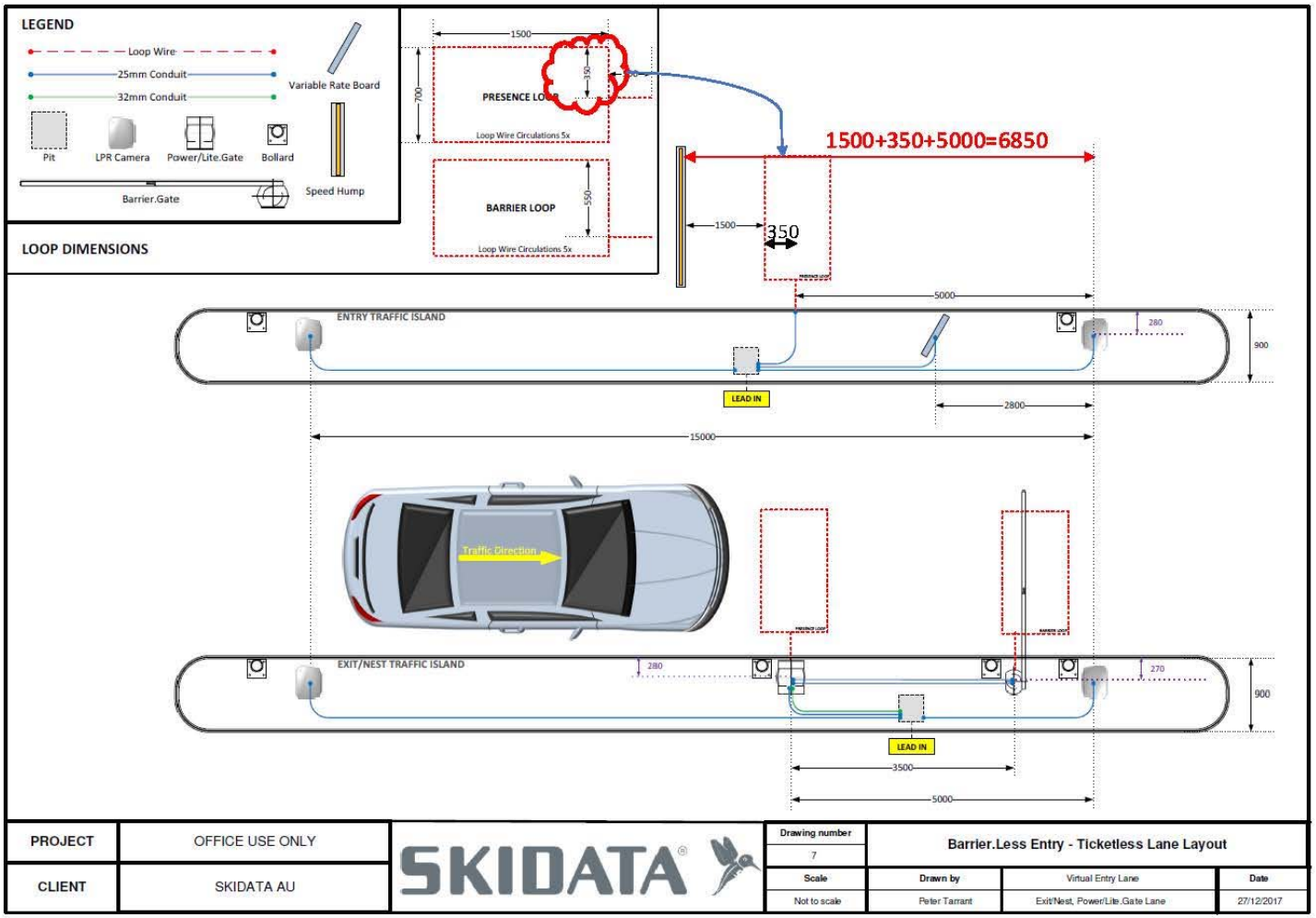
MARRICKVILLE METRO REDEVELOPMENT
34 VICTORIA ROAD MARRICKVILLE NSW 2204

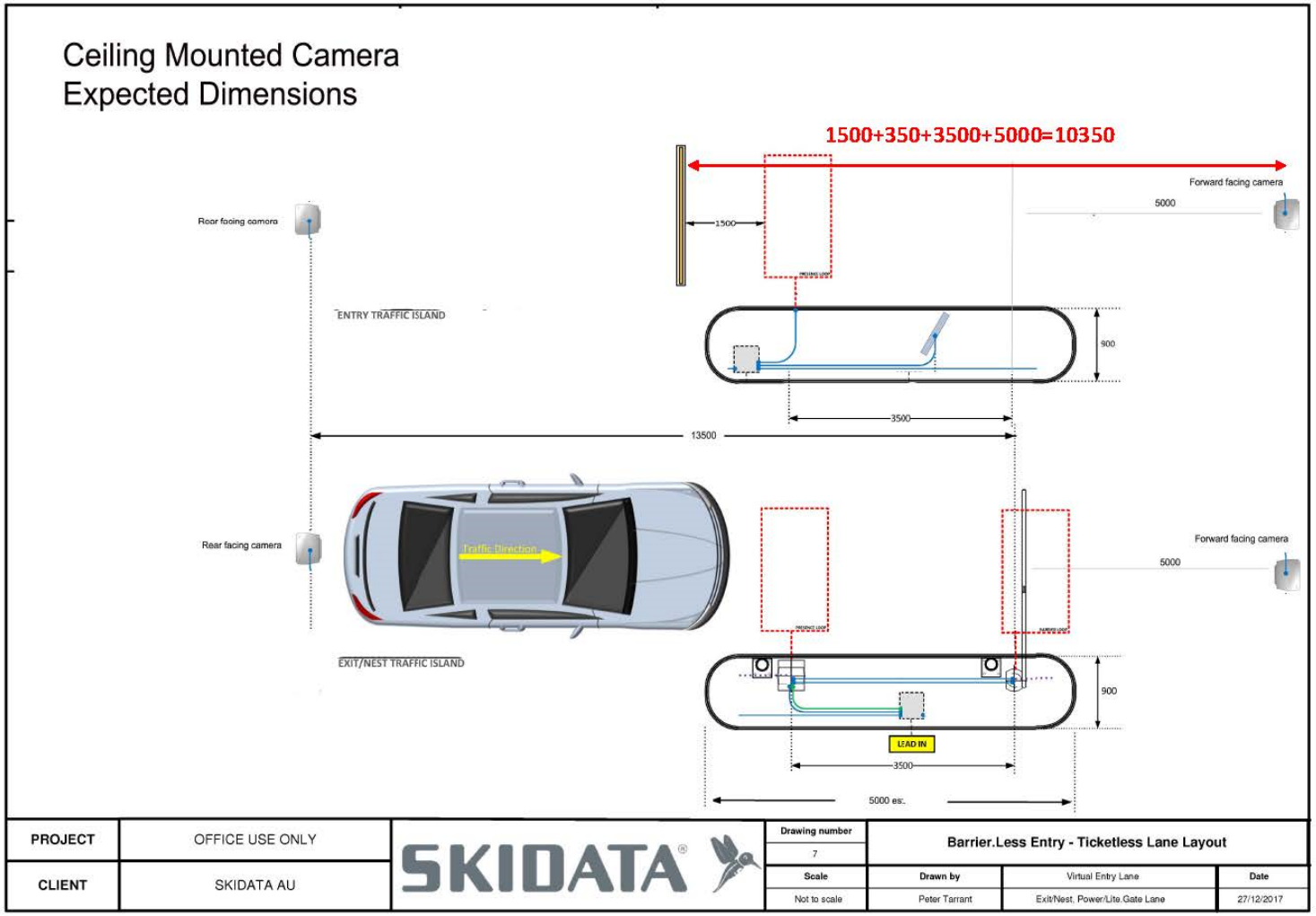
MASTER LEASE PLAN - LEVEL 2

Drawn by	Checked by	Scale @ A1
Author	Checker	1 : 250

Project No	Drawing No	Revision
50980	AR-1BNB-A20007	G

Status
TENDER REVIEW
TENDER 60%


LEGEND
Loop Wire
25mm Conduit
32mm Conduit
Variable Rate Board
Pit
LPR Camera
Power/Lite.Gate
Bollard
Barrier.Gate
Speed Hump
LOOP DIMENSIONS
1500
700
PRESENCE LOOP
Loop Wire Circulations 5x
BARRIER LOOP
550
1500+350+5000=6850
1500
350
5000
ENTRY TRAFFIC ISLAND
280
900
LEAD IN
2800
15000
Traffic Direction
EXIT/NEST TRAFFIC ISLAND
280
270
900
LEAD IN
3500
5000
PROJECT
OFFICE USE ONLY
CLIENT
SKIDATA AU
SKIDATA
Drawing number
7
Barrier.Less Entry - Ticketless Lane Layout
Scale
Not to scale
Drawn by
Peter Tarrant
Virtual Entry Lane
Exit/Nest, Power/Lite.Gate Lane
Date
27/12/2017


Ceiling Mounted Camera
Expected Dimensions
1500+350+3500+5000=10350
Forward facing camera
5000
Rear facing camera
1500
ENTRY TRAFFIC ISLAND
900
3500
13500
Rear facing camera
Traffic Direction
Forward facing camera
5000
EXIT/NEST TRAFFIC ISLAND
900
LEAD IN
3500
5000 est.
PROJECT
OFFICE USE ONLY
CLIENT
SKIDATA AU
SKIDATA
Drawing number
7
Barrier.Less Entry - Ticketless Lane Layout
Scale
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