



Memo

To: Michael Neustein, Director, City Planning Works

From: Chris Chun, Jacob Martin and Ryan Miller, WSP Australia

Subject: 7-9, 14-21 Chalmers Crescent Mascot DA - Traffic and Transport Impact Assessment

Date: 24 November 2025

1. Introduction

1.1 Project background

WSP has prepared the Traffic and Transport Impact Assessment (TTIA) to assess the traffic impacts associated with the proposed development at 7-21 Chalmers Crescent, Mascot NSW (the Project site), which is located within the Mascot West Employment Lands precinct. The TTIA report (PS210815 PAM SYD REP 001 RevD, September 2025) was completed to identify the future operating traffic conditions at key intersections adjacent to the Project site in 2036. In preparation of this TTIA report, several meetings were held with Bayside Council and Transport for New South Wales (TfNSW). The agreed modelling methodology was applied and all review comments received from both Bayside Council and TfNSW on the previous report were addressed.

Following submission of the TTIA, further discussions were held regarding a potential reduction in the number of car parking spaces provided. This reduction in parking provision is expected to lower peak hour traffic generation, which would influence the operational performance at key intersections which were previously forecast to operate unsatisfactorily under the original development traffic assessed.

This technical memo has been prepared to:

- outline the key findings from the latest TTIA, including estimated traffic generation based on the Gross Floor Area (GFA) of the development and the operational performance at key intersections where operating conditions were affected by the project traffic
- provide a summary of the revised car parking provision
- explain the basis for applying reduced traffic volumes resulting from the proposed decrease in parking spaces provided
- present the 2036 SIDRA modelling results for the weekday AM peak hour using the reduced traffic volumes. In the 2036 PM peak, all study intersections are expected to operate satisfactorily at a LoS D or better, hence no need to re-assess this peak hour.

1.2 Proposed development – GFA, parking spaces, traffic generation

The proposed development is planned as a commercial office building with seven levels of office space, providing a total GFA of 48,645 m² and 608 car parking spaces. Following consultation with TfNSW and considering the Project site's close proximity to public transport services including rail and bus, it was agreed that lower trip generation rates could be applied instead of the standard rates within TfNSW's *Guide to Transport Impact Assessment* (TS 00085, 2024).

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We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

To support the use of reduced vehicle trip generation rates, traffic generation surveys were carried out at nearby commercial and office buildings. These surveys indicated that average trip rates of 0.95 and 0.85 trips per 100 m² during the weekday AM and PM peak hours were suitable. Based on these rates, the TTIA assessed the 2036 scenarios using estimated traffic generation volumes of 439 vehicles in the weekday AM peak and 415 vehicles in the weekday PM peak, together with the expected background traffic growth.

1.3 Summary of modelling results from the previous traffic impact assessment

The operational traffic conditions at the six key intersections in 2036 were assessed for the weekday AM and PM peak hour under the future base model (Scenario 3) and the future with development model (Scenario 4).

The SIDRA results indicated that under the 2036 future base scenario, the Kent Road and Gardeners Road intersection (I-04) is expected to operate at Level of Service (LoS) F, meaning the existing layout would reach its capacity and would not be able to accommodate the forecast traffic growth to a satisfactory level. A Degree of Saturation (DoS) above 1.0 indicates that the intersection would operate beyond capacity and would be unable to manage future traffic volumes even without additional traffic from the project.

Under the post development scenario (Scenario 4), two of the six study intersections (I-03 and I-04) are projected to operate at an unsatisfactory LoS F during the weekday AM peak in 2036, with significant delays and long queues. Since I-04 already operates at LoS F under the future base conditions, the Kent Road and Ricketty Street intersection (I-03) is the only intersection where the unsatisfactory performance is attributed to traffic generated by the proposed development.

All study intersections are expected to operate satisfactorily during the weekday PM peak in 2036, achieving LoS D or better.

2. Proposed change

It is proposed that the number of car parking spaces at the Project site be reduced from 608 spaces to 500 spaces. Of these 500 spaces, up to 400 spaces would be allocated to staff and the remaining 100 spaces would be allocated to corporate vehicles. The 100 corporate vehicle spaces would be parked on site overnight and utilised across the day as required as pool vehicles. They will not be entering during the AM peak or exiting during the PM peak. As a result, the level of traffic generation during the weekday peak hour is expected to reduce for the following reasons:

- The car park will not operate as a public car park where drivers continue to circulate until all spaces are fully occupied. The spaces would be used only by allocated staff, who are aware that parking is available when they arrive. Staff who do not have an allocated space are unlikely to drive to the Project site.
- The 100 spaces allocated for corporate use are not expected to generate additional traffic during the AM peak, as corporate vehicle movements occur only when staff arrive at the Project site and are not concentrated within the peak hour. It is expected that the sole or dominant use of the development will be airport related. As airport operations are virtually 24/7 with a morning airport peak at about 3am, corporate vehicles will not add significantly to the normal am peak.
- Depending on the operational hours of the development, a portion of staff travel may occur outside the peak network period. Based on the existing traffic survey, the weekday AM peak hour at the key intersections occurs between 7.45 and 8.45 am. Even if staff begin work at similar times, it is not realistic to assume that all staff would arrive or depart within a single one hour period.
- Staff with allocated parking spaces may still choose alternative travel modes. The location of the Project site near Mascot Station, along with frequent bus services, supports lower car reliance and enables a shift to public transport.
- A proportion of staff are expected to continue working from home on some weekdays, consistent with current hybrid work patterns across Sydney. This reduces the likelihood that all 400 allocated staff parking spaces would be occupied on a daily basis and therefore peak hour vehicle demand will be reduced.
- Modern employment practices often support flexible start and finish times, which spreads staff arrivals and departures beyond the typical 8 am to 9 am period and reduces the concentration of traffic during the AM peak. The occupying business may also adopt staggered or shifted working hours to help alleviate intersection congestion during peak periods.

- Council has previously advised that the submission of a Green Travel Plan (GTP) allows a 10% reduction in the required number of parking spaces under DCP clause 3.5.2 control C7. This reflects Council's position that the implementation of a GTP directly reduces staff reliance on private vehicles and supports a shift towards public transport and active travel modes. Although the proposed development includes a GTP, no reduction has been applied to the traffic generation estimates in this memo. As a result, the assessment remains conservative, since the actual peak hour trips being generated is expected to be lower when the GTP measures are implemented.
- The Project site has very high accessibility to public transport, with convenient access to Mascot Station and frequent bus services. These conditions already meet Council's expectation that reduced parking provision should be supported by strong public transport access to enable a shift in mode share. Previous work undertaken for the TTIA examined bus, rail and pedestrian conditions and identified that the surrounding public transport network can accommodate increased patronage generated by the development. These findings support the expectation that reduced onsite parking will lead to a lower number of private vehicle trips during the peak hours.
- In the latest letter from TfNSW to Council (SYD24 00897 06, dated 11 November 2025), TfNSW advised: '*The traffic generation of the proposed development is expected to be closely linked to the amount of car parking provided on-site. The Public Transport Accessibility Level (PTAL) of the subject site is rated Very High and should the amount of car parking provision be reduced, the traffic impact of the proposed development is also likely to be reduced.*'

3. Traffic generation

WSP has undertaken a review of best-practice NSW trip generation and parking data to determine the likely effect of reduced parking provision on driver behaviour. This review focused on the findings contained in the *RTA Trip Generation and Parking Generation Surveys (Office Blocks) Data Report (2010)* which provides detailed survey results from 10 sites in NSW, across multiple different locations and scales. Note that this data report is the source used by TfNSW to determine the traffic generation rates for commercial office developments in the *Guide to Transport Impact Assessment* (TS 00085, 2024).

The following findings are considered to be particularly pertinent to the proposed development.

3.1 Effect of reduced parking provision on mode share

The *Office Data Report* details the development characteristics and travel behaviour, allowing for a direct comparison between staff parking provision and mode choice. A clear correlation can be seen in the outcomes of mode share surveys below (Figure 3.1), with reduced rates of on-site staff parking resulting in less driving by employees leading to reduced car mode share.

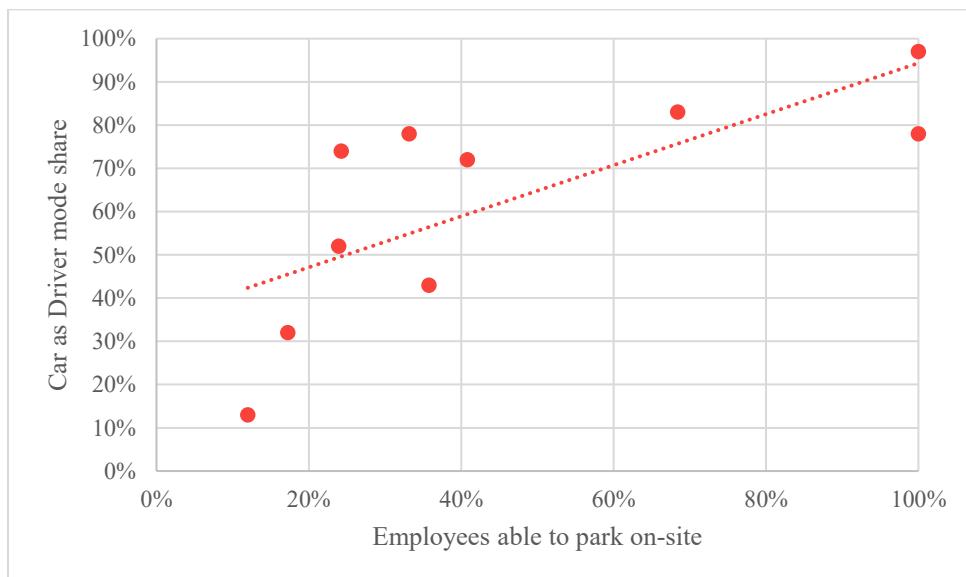


Figure 3.1 Comparison of staff parking bays to mode share

It is noted that for very low rates of parking provision, employees opt to supplement on-site parking with nearby public parking. However, the overall parking demand is still significantly lower than sites which provide ample parking.

The availability of frequent public transport services and the implementation of the GTP are expected to reinforce the trend towards reduced car use when onsite parking is limited. Council has already indicated that GTP measures justify a 10% reduction in parking needs, reflecting the expected shift towards public transport and active travel. As these effects have not been incorporated into the traffic generation estimates in this memo, the projected trip numbers remain on the higher side of what is likely to occur once the development is operational.

3.2 Effect of reduced parking provision on traffic generation

The *Office Data Report* also shows a strong relationship between staff parking supply and peak hour traffic generation, as described by the following charts (Figure 3.2).

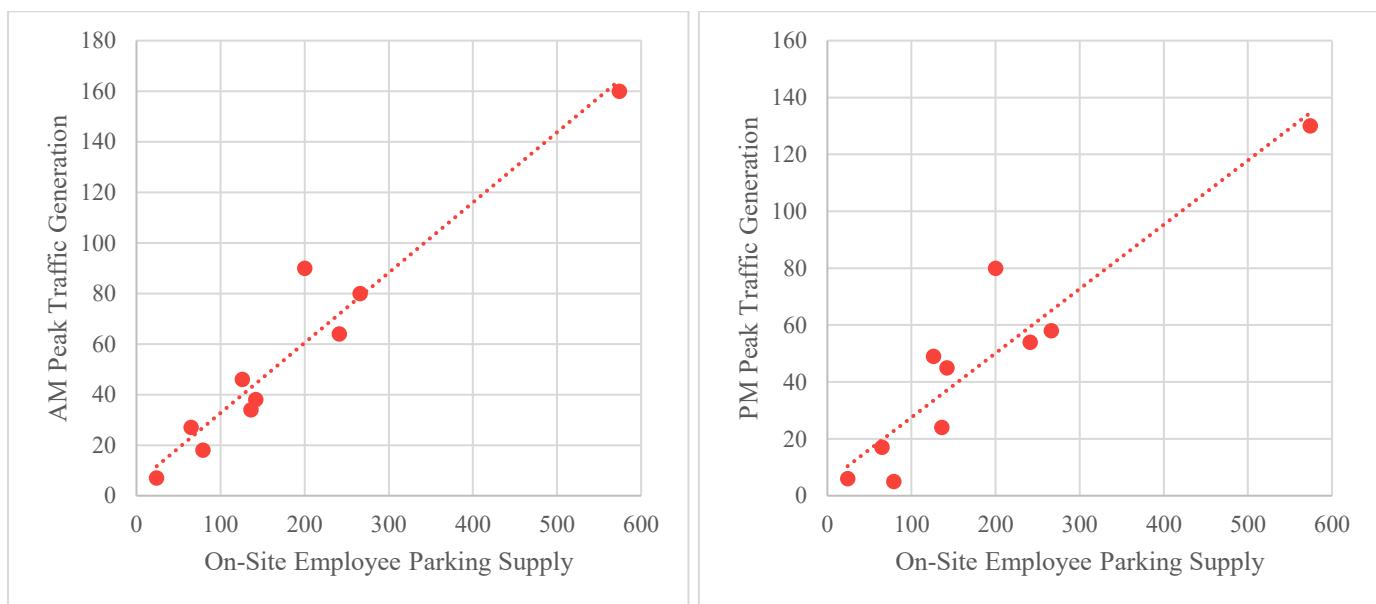


Figure 3.2 Comparison of parking bays to peak hour traffic generation – AM Peak (left) and PM Peak (right)

The average peak hour vehicle trip generation is very consistent across all car park supply numbers, with an average generation rate of approximately 0.31 vehicle trips per staff parking space in the AM peak hour, and 0.26 vehicle trips per staff parking space in the PM peak hour. It is understood that the proposed development will allocate 400 parking spaces to staff, with the remainder intended for corporate vehicles which are less likely to travel during the peak period. This is especially so for airport related uses.

Based on this baseline behaviour, the projected number of vehicle trips to and from the development would likely be as follows:

- AM Peak: $0.31 \times 400 = 124$ vph
- PM Peak: $0.26 \times 400 = 104$ vph

Even if all 500 bays were to operate on the same basis as above, peak hour vehicle trip generation would still only be 130-155vph.

This value is substantially lower than the assumed generation used for SIDRA intersection modelling (see below, Section 4). As such, that assessment is considered to be sufficiently conservative for the purpose of impact assessment.

4. SIDRA modelling results

As discussed above, the number of vehicle trips generated during the weekday AM peak is expected to be lower than the original estimate of 439 vehicles, which was based on the total GFA of the Project site. With staff parking limited to 400 spaces, the number of vehicle trips generated during the peak hour is likely to remain well below the available parking capacity. For the additional SIDRA modelling scenario (Scenario 4A), it is assumed that 85% of staff parking spaces would generate trips within

the one-hour weekday AM peak. This represents a highly conservative assumption, as it is very unlikely that such a large proportion of staff with allocated parking would arrive within the same one-hour period, making it a robust approach to assess intersection performance under peak conditions. Under this assumption, the 2036 AM peak hour has been reassessed with an estimated 340 vehicle movements generated by the Project site.

The SIDRA network modelling results for Scenario 4A (Year 2036 with reduced traffic generation) are summarised in the table below, with comparisons to Scenario 3 and Scenario 4 from the TTIA report. As the weekday PM peak results for both Scenario 3 and Scenario 4 are expected to operate satisfactorily, no modelling was conducted for Scenario 4A during the weekday PM peak.

It is noted that the reduced trip estimate used for Scenario 4A does not include any further reductions associated with the Green Travel Plan or the very high level of public transport accessibility at the Project site. These factors are expected to reduce trip generation further than assumed. As a result, the SIDRA modelling presented in this memo adopts a conservative approach that is likely to overstate actual peak hour traffic volumes.

Site ID	Intersection	Future 2036 AM Peak hour											
		Scenario 3 (Future 2036 Base)				Scenario 4 (Future 2036 Plus Development)				Scenario 4A (Scenario 4 with reduced traffic generation by Project)			
		DoS	Delay	LoS	Queue	DoS	Delay	LoS	Queue	DoS	Delay	LoS	Queue
I-01	Coward St/Kent Rd	0.89	44	D	209 (N)	0.95	51	D	340 (N)	0.97	51	D	336 (N)
I-02	Coward St/Bourke St	0.91	49	D	201 (N)	0.89	47	D	190 (N)	0.91	49	D	201 (N)
I-03	Kent Rd / Ricketty St	0.63	31	C	215 (NE)	1.07	87	F	314 (NE)	0.94	52	D	277 (NE)
I-04	Kent Rd / Gardeners Rd	1.05	100	F	465 (W)	1.22	132	F	522 (W)	1.19	122	F	486 (W)
I-05	Kent Rd / Chalmers Cr	0.15	6	A	4 (N)	0.42	7	A	17 (N)	0.36	6	A	14 (N)
I-06	Coward St / O-Riordan St	0.63	31	C	216 (S)	0.63	31	C	216 (S)	0.63	31	C	220 (S)

The analysis of Scenario 4A indicates that with the estimated 340 vehicle movements generated by the Project site, the intersection of Kent Road and Ricketty Street (I-03) is expected to operate satisfactorily, achieving a LoS D during the weekday 2036 AM peak hour. This demonstrates that even under a conservative worst-case assumption for staff arrivals, the intersection can accommodate the additional traffic without significant delays or excessive queuing, indicating that the proposed reduction in traffic generation effectively mitigates potential impacts on intersection performance.