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**Harbourside
MIRVAC
Supplementary
Transport Impact
Assessment;**

For: **MIRVAC**

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1. Introduction

This supplementary Transport Impact Assessment has been prepared by **ptc.** on behalf of Mirvac Retail Sub SPV Pty Ltd (Mircvac) and is submitted in support of a Section 4.55(1A) Modification Application submitted to the Department of Planning, Housing and Infrastructure (DPHI), to modify development consent SSD 49295711 relating to the detailed design, construction, and operation of the new Harbourside mixed-use podium and tower building.

The proposed Modification Application (SSD 49295711 MOD 2) relates to the following:

- Expansion of permissible uses on level 1 to include Commercial/Events & Conference uses;
- Amendments to the design of the ground floor residential and southern commercial lobbies;
- Amendments to level 4 office layout;
- Amendments to level 5 internal pool, external amenities and communal open space;
- Amendments to the general layout of levels 6 – 8;
- Amendments to levels 46 – 49 penthouse and rooftop plant;
- Various amendments to building services, plant, podium rooftop and facades following further design development and coordination; and
- Inclusion of design changes to the Bunn Street through-site link as required by the consent.

For a detailed description of the proposed modifications, please refer to the Modification Report prepared by Ethos Urban. The TIA prepared in April 2024 demonstrates that the above amendments will not give rise to unreasonable environmental impacts from a transport perspective.

This report is an addendum to the above proposed modification application (SSD 49295711 MOD 2), exclusively focusing on the parking and traffic impact on the surrounding road network generated by the proposed event space / conference use.

2. Parking Controls

Harbourside is located within the City of Sydney LGA and in establishing the parking provision requirements, reference is made to the parking provision rates stipulated in the following documents for assessment:

- City of Sydney Development Control Plan (DCP) 2012
- Sydney Local Environmental Plan (LEP) 2012
- National Construction Code (NCC) 2022
- Building Code of Australia Volume One 2022 (BCA)
- Australian Standard 2890 (AS 2890)
- Planning Guidelines for Walking and Cycling NSW Government 2004

2.1. Car Parking

The assessment of Level 1 has been undertaken on the basis that an Event / Conference space would replace the approved office GFA within that entire level. This assessment is done on the entire Level 1 GFA (11,600m²) to account for the proposed change of use for all of Level 1, adopting a more conservative approach.

The LEP car parking rates indicate a maximum allowance of 167 car parking spaces and given the location in a high-density area with convenient alternative transport options, no further parking provision is proposed to be associated with an Event & Conference usage, beyond a spatial proportional allocation of the approved 30 spaces under the Commercial use.

The development is located within close proximity to large scale public car parks at 100 Murray Street (having a footbridge connection to Harbourside) and the ICC (P1). As part of this assessment, parking demand surveys have been undertaken to determine the availability of parking in these facilities (see Section 5). The reliance on existing car parking provides a sustainable outcome by using current parking infrastructure intended for the area, rather than constructing new parking that would otherwise exceed the demand and enable/facilitate more vehicles movements to the area.

2.2. Accessible Parking

The LEP does not outline specific accessible car parking rates for Event & Conference. In lieu of such information, reference has been made to the *National Construction Code 2022 Building Code of Australia – Volume One* (BCA).

As per NCC Building Classification, the corresponding building class for Event & Conference is Class 9b buildings. The NCC Building Classification classifies the Event & Conference under class 9b buildings which are assembly buildings in which people gather for social, theatrical, political, religious or civil purposes.

In accordance with the NCC 2022 Volume One Part D4 Access for people with a disability of the BCA, the minimum accessible parking spaces for Class 9b buildings.

The Schedules part of the DCP states that: *Accessible parking is not required in a car parking areas where a parking service is provided and direct access to any of the car parking spaces is not available to the general public or occupants.*

The office component of the proposed Modification Application (SSD 49295711 MOD 2) includes provisions for 2 commercial staff accessible space, meeting the minimum DCP requirements. Since the event and conference area displaces office area, staff of an event / conference usage would be able to use the accessible parking spaces as needed.

2.3. Motorcycle Parking

In accordance with Schedule 7 - Section 7.8.4 of the DCP, there is a minimum provision rate of 1 motorcycle parking space for every 12 car parking spaces.

The office component of the proposed Modification Application (SSD 49295711 MOD 2) includes provisions for 10 motorcycle parking spaces, meeting the minimum DCP requirements. Since the event and conference area displaces office area, staff of an event / conference usage would be able to use the motorcycle parking as needed.

2.4. Bicycle Parking

The office component of the proposed Modification Application (SSD 49295711 MOD 2) includes provisions for 223 employee bicycle parking spaces, meeting the minimum DCP requirements. Since the event and conference usage would displace space currently allocated to office use, the event and conference usage would utilize the bicycle parking spaces as needed.

2.5. End of Trip Facilities (EOTF)

The office component of the proposed Modification Application (SSD 49295711 MOD 2) includes provisions for 273 lockers and 28 shower and change cubicles, meeting the minimum DCP requirements. Since the event and conference area displaces office area, staff of an event / conference usage would be able to use the EoTF as needed.

2.6. Service Vehicles

Section 7.8.1 of the DCP stipulates that for mixed use developments, the total number of service vehicle spaces is to be calculated on a prorated basis of spaces required for the relative proportions of different uses within the building.

2.7. Car Share

Section 3.11 Transport and Parking of the DCP outlines minimum requirements for "development that provides parking spaces for exclusive use by an organised car share scheme". The DCP states that "Car share parking spaces are to be provided in addition to the maximum number of car parking spaces permitted in the development."

We consider that car share provision would not be required for an event / conference use, as it represents a destination rather than an origin for trips.

Based on the above parking requirements and provisions, the event/conference use does not require any changes to parking controls.

3. Car Parking Demand Assessment

3.1.1. Parking Occupancy Survey

To understand the parking availability for patrons, parking surveys have been conducted, consistent with the intersection traffic surveys on a Thursday (29th August 2024, 5pm-8pm) and a Saturday (30th August 2024, 3pm-7pm) for off-street car parks (ICC P1 and 100 Murray Street's car parks) located within the vicinity of venue.

The aim of the parking occupancy survey was to identify the parking demand, ascertain the parking vacancy rate during peak time. This survey does not ascertain the parking demand or utilisation as a direct result of potential event / conference patrons, as the parking areas are utilised by other businesses, visitors, resident and facilities within the Harbourside area.

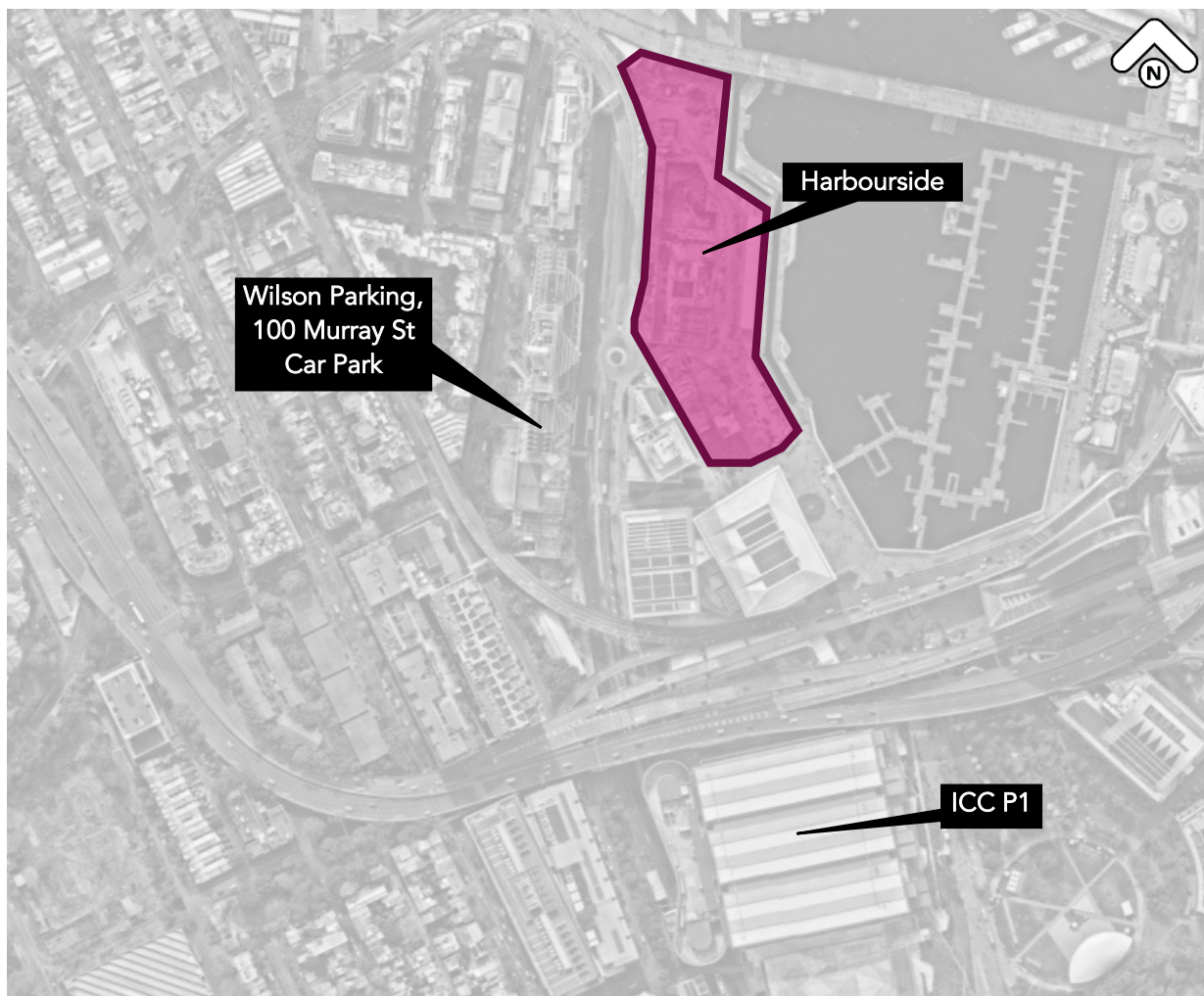


Figure 1 - Off-Street Car Parks Near the Development Site

Table 1 and Table 2 below present the existing parking capacity and occupancy of the car parks during the weekday and weekend.

Table 1 – Weekday Occupancy Survey Results

Location / Type of Parking	Capacity of Car Parking	Thursday Survey					
		No. of cars parked			Parking Occupancy Rate		
		5pm	6pm	7pm	5pm	6pm	7pm
Wilson Parking, 100 Murray St car park							
Public	1276	451	334	306	35%	26%	24%
Disabled	15	2	2	5	13%	13%	33%
Reserved	8	0	0	0	0%	0%	0%
Total	1299	453	336	311	35%	26%	24%
ICC P1 car park							
Standard	620	410	434	448	66%	70%	72%
Disabled	10	7	7	7	70%	70%	70%
Total	630	417	441	455	66%	70%	72%

Table 2 – Weekend Occupancy Survey Results

Location / Type of Parking	Capacity of Car Parking	Saturday Survey							
		No. of cars parked				Parking Occupancy Rate			
		3pm	4pm	5pm	6pm	3pm	4pm	5pm	6pm
Wilson Parking, 100 Murray St car park									
Public	1276	574	610	599	556	45%	48%	47%	44%
Disabled	15	0	1	2	1	0%	7%	13%	7%
Reserved	8	0	0	1	1	0%	0%	13%	13%
Total	1,299	574	611	602	558	44%	47%	46%	43%
ICC P1 car park									
Standard	620	270	243	229	283	44%	39%	37%	46%
Disabled	10	3	3	3	3	30%	30%	30%	30%
Total	630	273	246	232	286	43%	39%	37%	45%

Note: The car parking numbers in the tables above do not include Electric Vehicle charging bays.

We identified a total of 1,299 car parking spaces at Wilson Parking and 630 spaces at ICC P1 during peak times. Additionally, there is secure parking available at the Harris Street car park, located at 320 Harris Street, Pyrmont.

The peak occupancy was as follows:

- **Thursday Peak** - 453 cars were parked at Wilson Parking during the highest demand period (5:00pm – 6:00pm) and 455 cars were parked at ICC P1 car park during its highest demand period (7:00pm – 8:00pm).
- **Saturday Peak** - 611 cars were parked at Wilson Parking during the highest demand period (4:00pm – 5:00pm) and 286 cars were parked at ICC P1 car park during its highest demand period (6:00pm – 7:00pm).

Table 3 – Total Parking Occupancy Rate

Peak Period	Total Capacity of two car parks	Total no. of cars parked	Parking availability	Available Parking Occupancy Rate
Weekday Peak	1,929	908	1,021	53%
Weekend Peak	1,929	897	1,032	53%

3.2. Event / Conference Parking Demand Assessment

ptc.'s approach to estimating parking demand is to convert raw patrons and travel mode data into detailed demand estimates. We acknowledge that no two sites are identical; therefore, our general methodology is tailored to the requirements of each specific site.

Based on the total number of cars accessing the event / conference space during peak hours calculated, we have prepared the future event / conference peak parking demand based on the expected patronage.

3.2.1. Patron Travel Mode Study

ptc. have identified and surveyed a large venue in the inner Sydney area, which has been used to generate an indicative travel mode distribution of event / conference space patrons at the Harbourside development. It is noted that the sample venue is not located in close proximity to the Sydney Rail network, unlike Harbourside, which is located within walking distance of Town Station and the recently opened Gadigal Metro Station. In this regard the following analysis likely presents a robust assessment whereby public transport usage may be higher, reducing the car usage in the mode-share table presented below.

Table 4 – Patron Mode Share

Mode	Mode Share
Private Car	25%
Taxi/Uber	21%
Light Rail	23.5%
Bus	20%
Shuttle	5.5%
Walk	5%

The survey data also indicates a car occupancy rate of 2.4 persons per car (private vehicles), which can be applied to the mode share in order to establish the parking demand. We set out below the rationale for interpreting our demand estimates:

Total number of cars during peak hours = (Number of patrons attending the event / conference during peak hours x % of patrons driving a car and requiring a car space) / (number. of people per car).

The table below summarises the hourly peak arrival and departing trips for each transport mode using the below calculation methodology. This data is founded upon a significant collection of relevant data, including patron travel surveys, patron post-code data and traffic surveys.

Table 5 – Peak Hour Total Parking Demand by Car

Mode	Number of Patrons by Car	Mode Share	Occupancy	Total Vehicles
Private Car	750	25%	2.4	313

3.2.1. Queuing Analysis

A queuing analysis has been undertaken to assess the performance of the pickup/ drop-off activities associated with the proposed event/conference space. For this analysis, it has been assumed that 21% (refer Table 4) of the total the capacity will utilize these services, which results in 630 patrons.

The following inputs and assumptions have been adopted for the queueing analysis:

- Maximum demand for taxi/uber – 630 patrons,
- Vehicular trips at the access - An occupancy of 2.0 passengers per vehicle (excluding the driver) has been adopted i.e., 315 vehicular trips per hour.

Table 6 - Peak Hour Total Parking Demand by Taxi/Uber

Mode	Number of Patrons	Mode Share	Occupancy	Total Vehicles
Taxi/Uber	630	21%	2.0	315

For the purposes of this analysis, Poisson distribution has been used to analyse the queuing system based on the arrival rate, departure rate and service time.

- The drop-off area accommodates 4 vehicles with each space having a length of 6 metres. The approach lane, which is within the property of Harbourside, provides for queuing in the event that the drop-off area is under peak demand.
- Different time periods and service times are assumed for the pick-up / drop-off activity. The arrival at an event tends to occur over a shorter and more define period leading up to the start time (with some overlap beyond the start time) while the vehicle dwell time is short involving people exiting the vehicle. In terms of modelling, this is a single random event (the arrival of the vehicle). Conversely, the pick-up activity is typically distributed over a longer period, but involves a longer dwell time, as this activity comprises two random events (the arrival of the vehicle and the arrival of the passengers). The random nature of the two events is somewhat constrained by the use of booking apps, which allow the passenger to see the location and arrival time of the vehicle. In this regard the dwell time is assumed to be double that of the drop-off dwell time as shown in below table:

Table 7 – Queuing Analysis Summary

Mode	Inputs		Outputs	
	Time period (mins)	Service time (secs)	95% confidence	
			Cars in system	Cars in queueing
Total taxi/uber arriving	315 vehicles			
Drop-off	30mins	20 secs	9	5
Pick-up	60mins	40 secs	9	5

Using these inputs, the Poisson distribution analysis indicates that there will be 9 cars in the queue (4 in proposed parking bays and 5 queueing) during both the pick-up and drop-off periods.

It is noted that the distance from the back of the drop-off zone to the car park entry/exit is 85m, which equates to approximately 14 vehicles. As such, the potential queued taxis/Ubers generated by the

proposed event / conference space can be accommodated within the storage length of the approach lane, which will have no impact on Darling Drive.

However, it is important to note that there should be traffic management measures in place to control or manage the vehicle service times during a typical event/ conference scenario. These could potentially include:

- Digital parking signages – to allow the parking controls to be varied depending on the day-to-day operations of the site.
- Personnel – to direct the traffic and ensure vehicles abide by the parking controls.

As such, the proposed pick-up/drop-off is anticipated to perform satisfactorily.

The results of the queuing analysis for both the pick-up and drop-off are attached in **Appendix 3**.

3.2.2. Summary of Future Peak Parking Demand for Event / Conference Use

We have compared the additional peak parking demand generated by the area with the total vacant off-street spaces within the vicinity of the site. Our analysis of future parking surplus / shortfall is summarised as follows:

Table 8 – Analysis of Parking Surplus / Shortfall of Future Peak Parking Demand

Weekday / Weekend	Event Parking Demand (at event's maximum capacity)	Car Parking Demand			Surplus / Shortfall
		Total capacity of the two surveyed car parks	Total No. of cars occupied during the peak	Vacant Spaces within the vicinity of the site during peak	
Weekday	313	1,929	908	1021	+708
Weekend	313	1,929	897	1032	+719

From the data presented above, an event / conference usage would require 314 car parking spaces when operating at full capacity. This is considered an extremely conservative estimate, as it is unlikely that the entire Level 1 area would ever be allocated to an Event / Conference use.

The surrounding car parks have a capacity of 1,021 parking spaces during weekday and 1,032 parking spaces during weekend, resulting in a surplus of 708 spaces on weekdays and 719 spaces on weekends. There are additional car parks in the area that could provide further supply but were not surveyed.

4. Transport Impact Assessment

Generally, the traffic activity associated with a particular type of land use can be determined through a number of approaches. For the purposes of this assessment, the traffic activity related to the existing land use for the existing and development traffic generation is determined with reference to the following documents:

- TfNSW Guide to Traffic Generating Developments 2002 (TfNSW Guide)
- TfNSW Technical Direction 2013/04a (TDT 2013/04a)

ptc. has undertaken traffic surveys and parking surveys to understand the current travel conditions in the vicinity of the Harbourside during the proposed or indicative event / conference on both weekday and weekend.

4.1. Road Hierarchy

The road network is described in full within the TIA supporting the Section 4.55 Modification Application, however the following section describes roads and intersections that are relevant to the proposed event space / conference use and associated traffic modelling presented in this report.

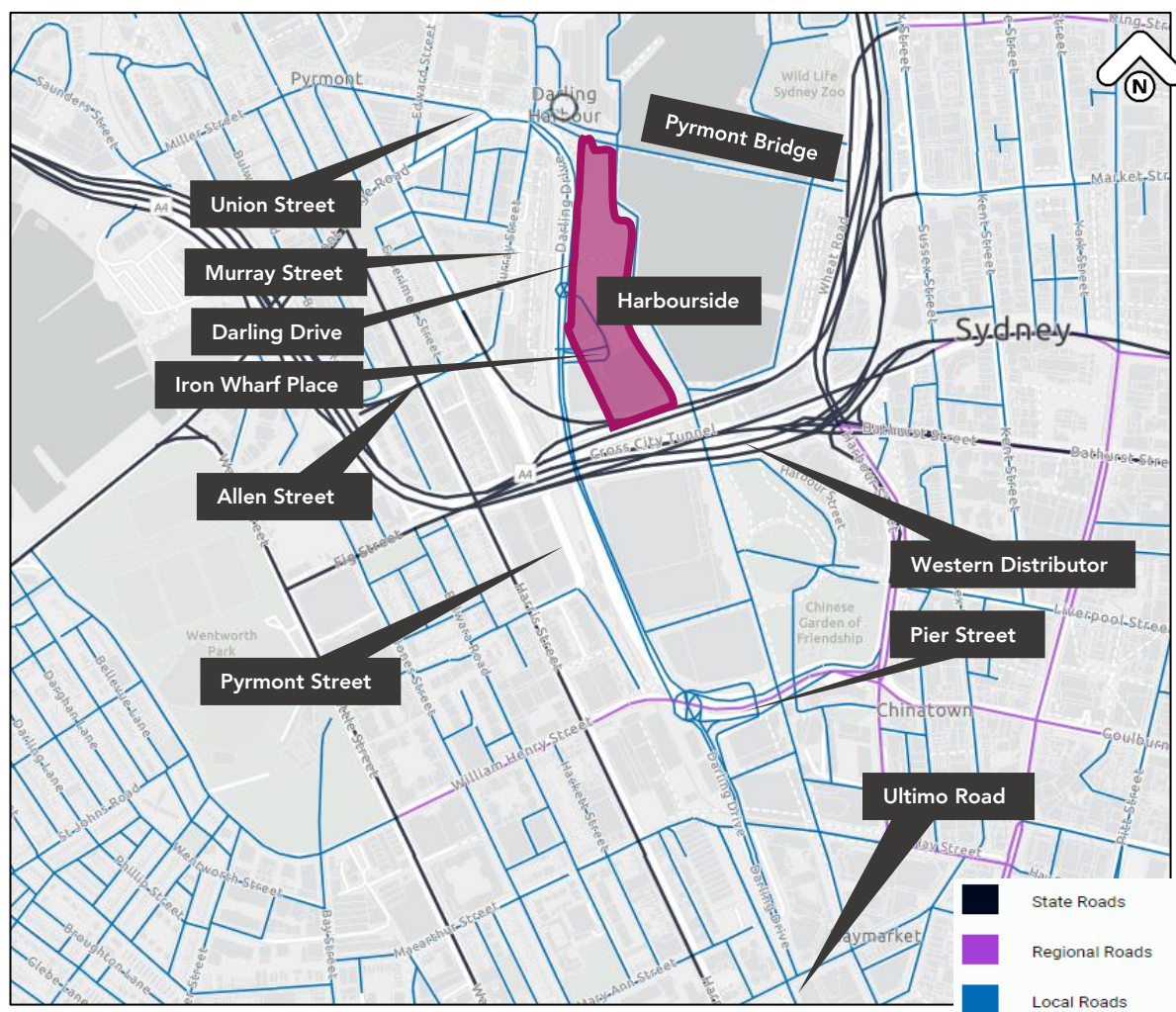


Figure 2 - Surrounding Road Network (Source: TfNSW)

4.2. Key Intersections

The key intersections in the vicinity of the project and their characteristics are listed below:

- Darling Drive / Murray Street / Union Street 4-arm signalised
- Darling Drive / Pier Street / Zollner Circuit 3-arm roundabout
- Darling Drive / Ultimo Road 3-arm signalised
- Murray Street / Pyrmont Street / Allen Street 4-arm signalised



Figure 3 - Key Intersection Locations (Source: Nearmap)

4.3. Traffic Surveys

Intersection traffic surveys were undertaken at the following intersections, excluding I-5 on Thursday 29 August 2024 (outside of the school holiday period), between 5:00pm-8:00pm, and on Saturday 31st August 2024 between 3:00pm-7:00pm. These periods were selected to coincide with the commuter peaks. The existing traffic volumes for Darling Drive / Iron Wharf Place - Entry (I-5) and Darling Drive / Iron Wharf Place – Exit (I-6) were derived from the surveyed intersections.

Number	Intersection	Description
I-1	Darling Drive / Murray Street / Union Street	4-arm signalised
I-2	Darling Drive / Pier Street / Zollner Circuit	3-arm roundabout
I-3	Darling Drive / Ultimo Road	3-arm signalised
I-4	Murray Street / Pyrmont Street / Allen Street	4-arm signalised
I-5	Darling Drive / Iron Wharf Place	3-arm roundabout
I-6	Darling Drive / Iron Wharf Place - Exit	3-arm priority controlled

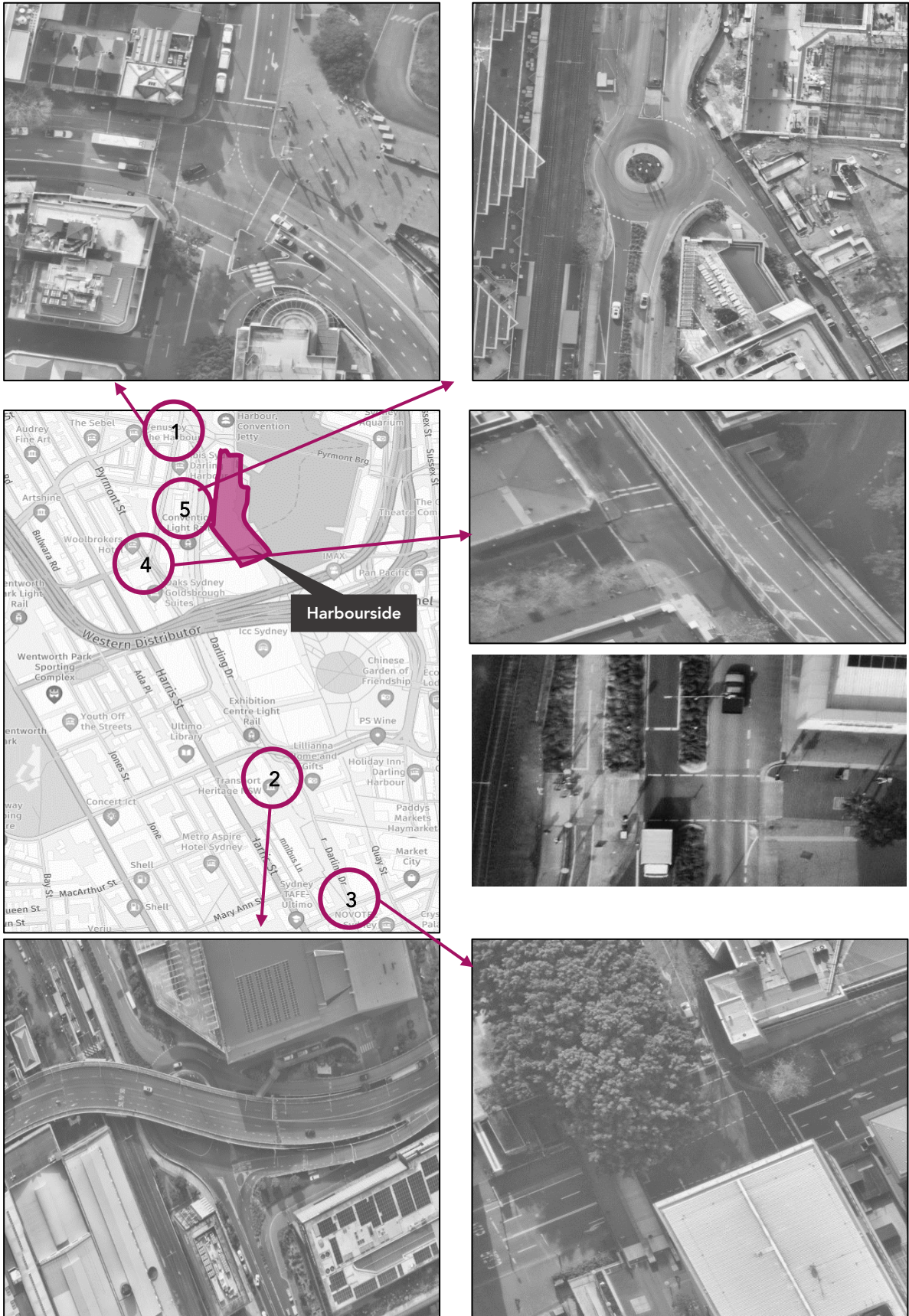


Figure 4 – Key Intersections (Source: Nearmap)

4.4. Existing Traffic Volumes

The analysis of traffic survey data has found that the area has the following network peak hours:

- Weekday PM Peak: 5:15pm to 6:15pm
- Weekend PM Peak: 5:45pm to 6:45pm

The existing traffic volumes are attached in **Appendix 1**.

4.5. Development Traffic Generation

The traffic generated from any event would be dependent on the type, frequency and size of the event/conference use. In general:

It is noted that the guides do not provide any traffic generation rates for event uses. Therefore, it is assumed that each staff / patron will generate one inbound trip and one outbound trip to / from the event / conference use.

Table 9 – Development Transport Trips

Land use	Users	GFA	Capacity	Trip Generation Rate		Trip Generation	
				Inbound	Outbound	Inbound	Outbound
Event / Conference use	Staff	11,600m ²	280	1 trip per staff	1 trip per staff	280	280
	Patrons		3000	1 trip per patron	1 trip per patron	3000	3000

- Staff – Staff would be expected to travel to and from the site by public or active transport, or if by private vehicle, will not be parking at the site. As such, the vehicle trips to the site generated by the 278 staff would equate to zero.
- Patrons – Patrons making use of the event / conference use will travel to the site using a combination of travel modes as per the following table. It is noted that during the road network peak, taxis and ubers would arrive and depart the event / conference space, however private cars will only arrive during this period, hence a zero-departure figure in Table 10.

Table 10 – Peak Hour Total Vehicle Trips Summary

Mode	Mode Share	Number of Patrons	Occupancy	Total Vehicles	Arriving %	Arriving Vehicles	Departing %	Departing Vehicles
Private Car	25%	750	2.4	313	100%	313	0%	0
Taxi/Uber	21%	630	2	315	100%	315	100%	315
Total		1380		628		628		315

4.5.1. Peak Hour Development Traffic Assumptions

The following should be considered when evaluating the trips generated by land use such as event spaces:

- Typical events and conferences of a business or corporate nature typically occur during working hours, and thus patrons are unlikely to be travelling on the road network during the commuter peak hours.
- Evening events and conferences are typically held following the PM commuter peak hour, and attendees may already be in proximity the site in nearby Darling Harbour, or the Sydney CBD.
- Events and conferences of maximum capacity would not be expected to occur daily, and as such are not considered part of typical daily traffic generation.

It is noted however, that in order to predict likely traffic characteristics for a proposed Harbourside event / conference space, some additional assumptions have been made:

- An occupancy of 2.0 passengers has also been adopted for taxis / uber and car share (excluding driver) based on the survey data of private vehicles;
- An occupancy of 2.4 passengers has also been adopted for based on the survey data of private vehicles;
- Car Hire vehicle occupancy is assumed to be high on average;
- For a robust assessment the peak hour will occur in the network peak hour
- Taxis, Car Share and Bus arrive and depart the site within the same hour;
- Around 50% of hired cars park in the nearby car parks for the event / conference duration, whilst the remaining 50% leave the site;

Based on the typical considerations above, it is unlikely that traffic generated by the event / conference space would align with network PM peak commute hours. Thus, it is not expected that these vehicle trips would increase the peak network traffic volumes. For a worst-case scenario assessment, the event / conference space related traffic volumes are estimated during the road network peak periods on both weekday and weekend, this is considered as a robust and conservative assessment.

Furthermore, the road network of the Darling Harbour precinct has been designed to accommodate the fluctuating activity associated with the Darling Harbour precinct and the event / conference space is consistent with this ongoing use.

4.6. Development Traffic Distribution

Off-street car parking for patrons is not proposed at Harbourside. Therefore, any traffic activity will depend on the availability of parking spaces in nearby car parks. Notably, there are nearby car parks, such as 100 Murray Street and ICC car parks, which offer paid parking.

Taxis and Ubers will drop off passengers at the site frontage, while private cars will need to use the nearby car parks.

- Wilson Parking Rates – At Wilson Parking, the maximum rates are \$16 on weekdays and \$25 on weekends during peak hours (3:00 PM to 7:00 PM).

- ICC Parking - At ICC P1 Parking, the minimum rate during peak hours (3:00 PM to 7:00 PM) is \$30 any day of the week.

For trip distribution purposes, considering the factors mentioned above, the locality and existing street arrangements, it is estimated that 70% of private will park at Wilson Parking, while 30% will use ICC P1 car park.

The trips arriving to the proposed development and the surrounding nearby car parks would be either from north or south of the site. The trip distribution for the proposed development is presented in Table 11.

Table 11 – Development Traffic Distribution

Mode	Inbound		Outbound	
	North	South	North	South
Private Car	40%	60%	40%	60%
Taxi/Uber	40%	60%	40%	60%
Car Hire	40%	60%	40%	60%

The post-development traffic volumes are attached in **Appendix 1**.

4.7. SIDRA Analysis

A volume analysis was performed using the SIDRA Intersection 9.1 software, a micro-analytical tool for individual intersection and whole-network modelling. The models are based on the collected traffic survey data. SIDRA provides a number of performance indicators outlined below:

- Degree of Saturation – The total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation. (e.g. 0.8=80% saturation)
- Average Delay – The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- 95% Queue Lengths (Q95) – is defined to be the queue length in metres that has only a 5-percent probability of being exceeded during the analysis time period. It transforms the average delay into measurable distance units.
- Level of Service (LoS) – This is a categorization of average delay, intended for simple reference. It is a good indicator of overall performance for individual intersections. The RMS adopts the following bands:

Table 12: Intersection Performance - Levels of Service

Level of Service	Average Delay secs/vehicle	Traffic Signals, Roundabout	Give Way & Stop Signs
A	<14	Good operation	
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required

E	57 to 70	At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Extra capacity required	Extreme delay, major treatment required

4.7.1. Modelling Scenarios

The following scenarios have been assessed in this report for both the existing undeveloped site and the proposed development site:

- **Scenario 1 - Existing Base 2024:** Base case scenario using weekday morning and afternoon peak hour traffic volumes collected during the surveys. This case represents the existing traffic conditions during the respective peak hours.
- **Scenario 1 - Existing Base 2024 + Development:** Development scenario under the existing road network, this includes both the existing base traffic volumes and additional trips generated by the proposed development during the weekday morning and afternoon peak hours. This case represents the likely traffic impact of the development proposal.

4.7.2. Traffic Modelling Results

The summary of the existing and post development performance of the local road network is summarised in Table 13. A detailed breakdown of the SIDRA movement summaries is provided in **Appendix 2**.

Table 13 - SIDRA modelling results summary

Intersection	Peak Hour	Scenarios	Average LOS ¹	Average delay (sec)	Highest DoS (v/c)	Highest Q95 (m)
1 – Darling Drive / Murray Street/ Union Street	Weekday PM	Existing	C	34.7	0.477	77.6
		Existing + Development	C	33.0	0.833	95.8
	Weekend PM	Existing	C	36.9	0.401	68.6
		Existing + Development	C	30.7	0.716	46.2
2 - Darling Drive / Pier Street / Zollner Circuit	Weekday PM	Existing	A	12.3	0.495	20.6
		Existing + Development	B	18.9	0.733	50.7
	Weekend PM	Existing	A	11.9	0.467	18.4
		Existing + Development	B	17.6	0.695	17.9
3 - Darling Drive / Ultimo Road	Weekday PM	Existing	B	15.5	0.627	47.1
		Existing + Development	B	17.7	0.820	71.6
	Weekend PM	Existing	B	16.8	0.528	42.9
		Existing + Development	B	17.9	0.695	37.7
4 - Murray Street / Pyrmont Street / Allen Street	Weekday PM	Existing	B	21.2	0.263	55.6
		Existing + Development	A	14.0	0.350	51.3
	Weekend PM	Existing	B	21.5	0.280	55.6
		Existing + Development	A	13.8	0.369	32.3
		Existing	A	8.9	0.313	6.0

¹ For signalised intersections, the average delay results have been reported. It is noted that for priority-controlled intersections, the minor road usually experiences the highest delay whereas the major road experiences zero delay. In light of this, the average delay results may not be a suitable method of assessing the performance of an intersection. Therefore, the delay and corresponding LoS for the worst movement have been reported for priority-controlled intersections.

5 – Darling Drive / Iron Wharf Place (Entry)	Weekday PM	Existing + Development	A	8.8	0.498	15.6
	Weekend PM	Existing	A	8.8	0.296	9.2
		Existing + Development	A	8.8	0.510	9.2
6 – Darling Drive / Iron Wharf Place (Exit)	Weekday PM	Existing	A	5.6	0.275	0.7
		Existing + Development	A	6.5	0.441	9.3
	Weekend PM	Existing	A	6.3	0.260	1.2
		Existing + Development	A	8.1	0.425	5.6

The analysis confirms that the intersections continue to perform well with the additional trips generated by the proposal. Across all intersections, the level of service remains consistent, with no significant deterioration in average delays or capacity. For example, at the Darling Drive/Murray Street/Union Street intersection, the weekday PM peak shows a slight increase in delay but maintains a LOS C, indicating minimal impact. The highest Degree of Saturation across all intersections remains within acceptable limits, confirming that the road network can handle the increased traffic without significant degradation in performance.

5. Conclusion

ptc. has been engaged by Mirvac to prepare a supplementary Transport Impact Assessment to accompany the s4.55 (1A) modification application to the Department of Planning, Housing and Infrastructure. This modification application has considered the expansion of permitted use of Level 1 of the development to include the potential Event / Conference use.

A review of the potential traffic activity associated with the development site has found that the proposed event / conference space is anticipated to have minimal impact on the surrounding road network or traffic.

The parking surveys conclude that there is sufficient parking at the two nearby car parks within the surrounding road network to meet the demand generated by the event / conference space, while still providing plenty of parking for other users. Since no car parking is planned within the development, the surrounding car parks will be able to accommodate the event / conference parking needs.

Overall, it is concluded that the proposed event / conference use can be accommodated with the available capacity at the nearby car parks and can handle the traffic impact at the nearby intersections.

Appendix 1. Existing & Post-Development Traffic Volumes

Appendix 2. SIDRA Movement Summaries

Appendix 3. Queuing Analysis