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APPENDIX

1. Existing Peak Morning and Evening Traffic Surveys

1. INTRODUCTION

This Practice has been commissioned by Toplace Pty. Ltd. to prepare a Traffic and Transport Impact Assessment report to accompany a Planning Proposal for the redevelopment of land, located 146 – 154 O’Riordan Street, Mascot (‘subject site’). The Planning Proposal to be lodged with Bayside Council (‘Council’) seeks to increase the maximum permissible building height from 22m (currently allowed under Botany Local Environmental Plan 2013) to part 44m. It is noted that no changes are proposed to the zoning of the land or permitted density as part of the Planning Proposal.

The future traffic impacts of the surrounding precinct have been assessed by others as part of the proposed upgrade of the adjoining road network in the immediate vicinity of the subject site associated with the redevelopment of Sydney Airport. The purpose of this report is therefore to primarily assess the potential traffic and transport implications associated with the planning proposal and where necessary, recommend appropriate treatment measures to ameliorate any adverse impacts. Specifically, this report:

- Describe the existing transport conditions in vicinity of the subject site, including the existing traffic network, traffic volumes and available public transport network;
- The likely additional traffic potentially generated by the Planning Proposal estimated based on traffic generation rates provided with RMS’ Guide to Traffic Generating Developments and its *Updated Traffic Surveys* (TD 2013/04a); and
- The impact of this additional traffic on the existing surrounding road network.

Throughout this report, reference is made to the following documents:

- The Roads and Maritime Services’ *Guide to Traffic Generating Developments* and its *Updated Traffic Surveys* (TD 2013/04a);
- Transport Modellers Alliance’s *Traffic and Transport Assessment (West Connex Enabling Works – Airport West)*.

This report has been prepared pursuant to State Environmental Planning Policy (Infrastructure) 2007.

The report should be read in conjunction with the Urban Design Report prepared by PTW Architects.

2. SITE DETAILS

2.1 Site Location

The subject site is situated on the eastern side of O’Riordan Street, opposite Bourke Road, Mascot. The site location is shown overleaf within its surrounding road hierarchy and local land use context in **Figures 1** and **2** respectively.

2.2 Site Description

The site comprises a number of allotments, providing a collective street address of 146 – 154 O’Riordan Street, Mascot. The consolidated lots forms an irregular shaped parcel of land providing a single frontage to O’Riordan Street of approximately 158m. The total site area is in the order of 17,318m².

2.3 Existing Uses

The site currently accommodates a number of commercial office tenancies. Vehicular access to the existing on-site development occupying 146 O’Riordan Street, Mascot is currently facilitated by separate ingress and egress driveways connecting with O’Riordan Street at the north-western and south-western corners of this property.

Property No. 154 O’Riordan Street, Mascot, which forms the southern portion of the subject site is currently serviced by a combined ingress/egress driveway connecting with O’Riordan Street at the centre of the property boundary.

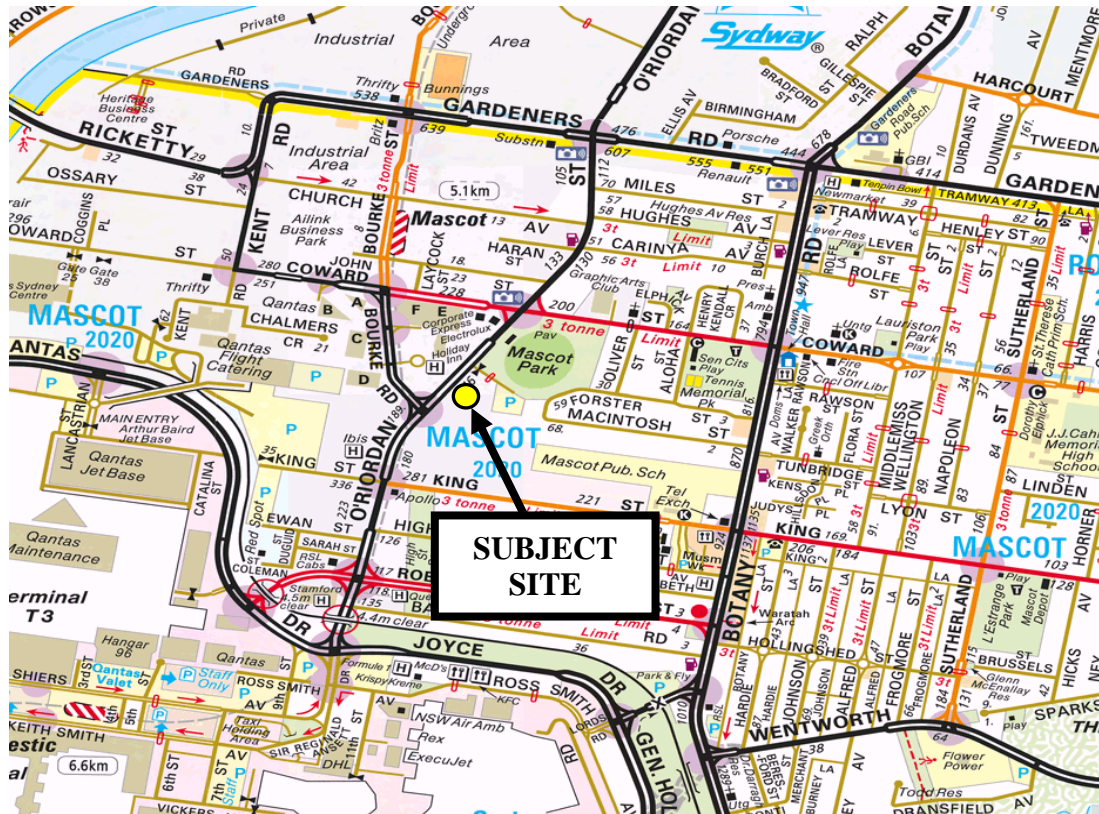
The existing on-site development described above, is proposed to be demolished as part of the subject DA

2.4 Surrounding Uses

The site is surrounded by the following mix of land-uses:

- A sporting oval is located to the immediate north;
- Detached residential dwellings occupy the land to the east;
- Commercial and warehouse tenancies are located to the immediate south; and
- A hotel development is situated to the immediate west (across O’Riordan Street).

FIGURE 1
SITE LOCATION – SURROUNDING ROAD NETWORK CONTEXT



Source: <http://www.street-directory.com.au> (Accessed 14/12/18)

FIGURE 2
SITE LOCATION – LOCAL LAND USE CONTEXT



Source: Six Maps (Accessed 14/12/18)

3. PROPOSED DEVELOPMENT

3.1 Built Form

The subject development seeks to modify Botany Local Environmental Plan 2013 to increase the maximum allowable building height from 22m to 44m. The Planning Proposal does not seek to alter the zoning of the land or the permitted density.

It is understood that the change in building height will not change the types and forms of development that are permitted in the zone. An increase in height is likely to facilitate the site utilising the permitted FSR. In order to consider the possible traffic implications of the increased height, an analysis will be undertaken in the form of permitted development in the zone. This report will consider an intensification of the hotel and serviced apartments' usage on the site. It is understood that the increased height is likely to yield approximately 562 serviced apartments and 253 hotel rooms.

As the development site only has a single frontage to O'Riordan Street, any future access to the site would occur via this public road. The existing raised central median with O'Riordan Street in the immediate vicinity of site frontage is such that access movements is restricted to left in/left out.

4. EXISTING TRAFFIC CONDITIONS

4.1 Surrounding Road Network

It is usual to classify roads according to road hierarchy in order to determine their functional role within the road network. Changes to traffic flows on the roads can then be assessed within the context of the road hierarchy. Roads are classified according to the role they fulfil and the volume of traffic they should appropriately carry. In this regard, the Roads & Maritime Services has set down the following guidelines for the functional classification of roads:

- **Arterial Road** – typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per peak hour);
- **Sub-Arterial Road** – defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per peak hour);
- **Collector Road** – provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per peak hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably; and
- **Local Road** – provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per peak hour).

Peak hour volumes on most roads are typically eight to twelve percent of the daily volumes. In accordance with the above, the roads in the vicinity of the subject site are therefore described below:

- **O’Riordan Street** performs a State Road function under the care and control of the Roads and Maritime Services. It provides an important arterial route between Botany Road/Bourke Street in the north and Qantas Drive/Joyce Drive in the south, immediately adjacent to Sydney Airport.

O’Riordan Street generally forms a dual carriageway, providing two through lanes of traffic in each direction in the immediate vicinity of the site. It forms a T-junction with Bourke Road under traffic signal control, at which, the pavement widens to accommodate an exclusive right turn lane within the northern approach.

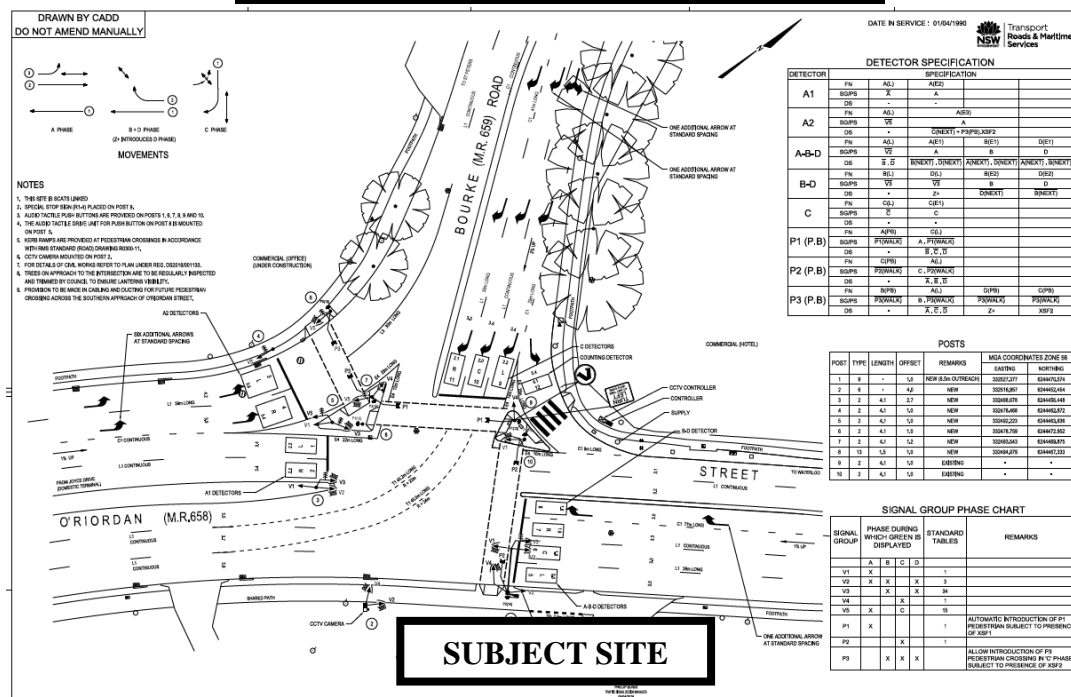
- **Bourke Road** performs a State Road function, providing an east-west connection between Ricketty Street/Canal Road and O’Riordan Street in conjunction with Kent Road and Coward Street. On approach to O’Riordan Street, Bourke Road currently provides two exclusive right turning lanes and an auxiliary left turn slip lane.

Traffic flow within both O’Riordan Street and Bourke Road is governed by a sign posted speed limit of 60km/h.

It has been previously mentioned that the surrounding road network (i.e. O’Riordan Street and Bourke Road) immediately adjacent to the subject site is proposed to be upgraded to provide additional travel/turning lanes, as part of the redevelopment of Sydney Airport. **Figure 3** depicts the future intersection layout of O’Riordan Street and Bourke Road, being an extract of the future traffic signal design for this intersection, obtained from the Roads & Maritime Services (RMS), whilst the following provides a summary of key road works:

- Widening along the eastern side of O’Riordan Street to support three (3) through lanes of traffic. The property boundary of the subject site along with adjoining sites abutting the eastern side of O’Riordan Street have been set back to accommodate the additional travel lane;
- The western side of O’Riordan Street to the south of Bourke Road is also proposed to be widened to support two (2) exclusive left turning lanes (Currently one (1) left turning lane is provided); and
- Bourke Road is proposed to be upgraded to provide three (3) right turning lanes and a left turning slip lane at its intersection approach with O’Riordan Street (Currently, two (2) right turning lanes and an exclusive left turning slip lane forms the existing layout).

FIGURE 3
FUTURE INTERSECTION CONFIGURATION OF
O’RIORDAN STREET AND BOURKE ROAD

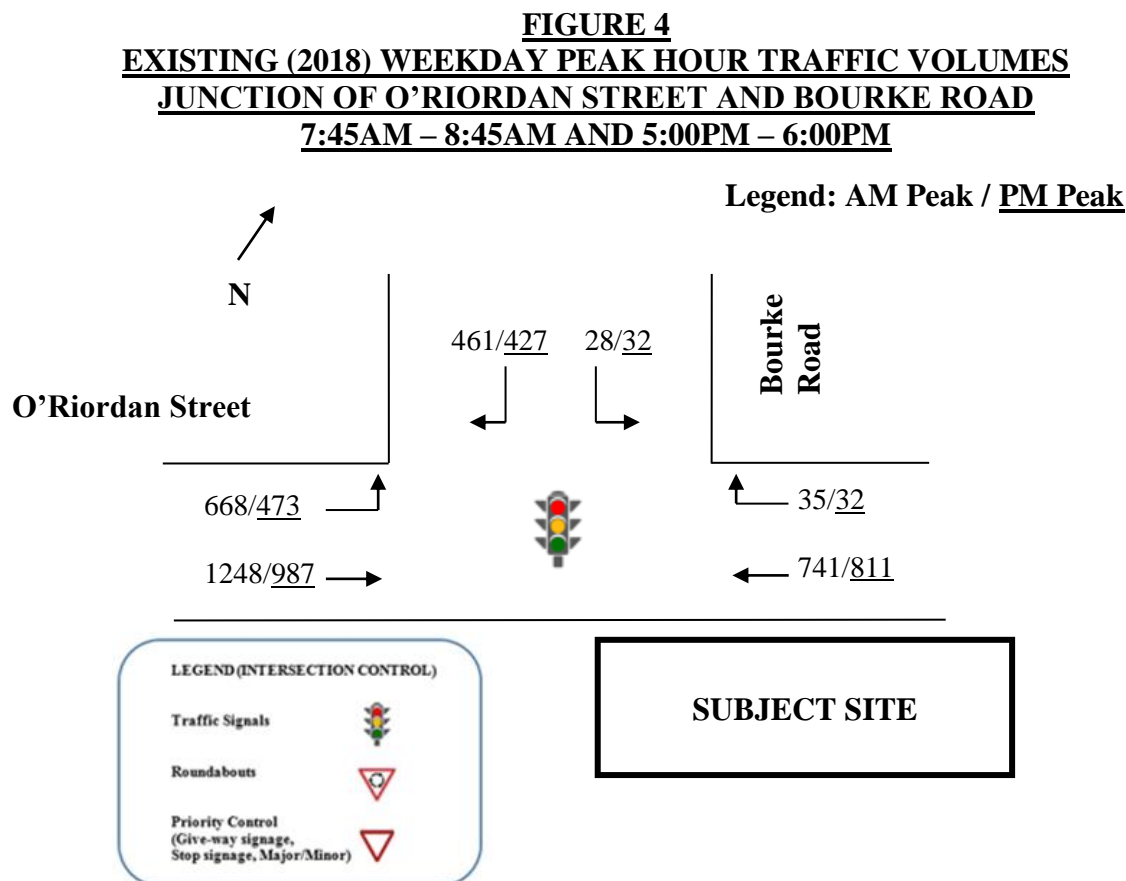


Source: Roads and Maritime Services

It is noted that the architectural design has been prepared in consideration of the abovementioned works, specifically the location of the future property alignment on O’Riordan Street. It is understood, following recent liaisons with the RMS that these works are imminent.

4.2 Existing Traffic Volumes and Conditions

In order to obtain an indication of the existing operation of the local road network adjacent to the site, reference is made to morning and evening peak hour traffic surveys undertaken by professional traffic surveyors on behalf of this Practice. Traffic surveys were undertaken at the junction of O’Riordan Street and Bourke Road between 7.00am – 9.00am and 4.00pm – 6.00pm on 29 September 2018. The peak hour traffic volumes obtained from these surveys (identified to be between 7:45am – 8:45am and 5:00pm – 6:00pm) are represented diagrammatically in **Figure 4**, whilst full details are provided in **Appendix 1**.



It is noted that the surveyed peak hour traffic demands presented above are similar to the existing volumes provided within the Traffic and Transport Assessment report previously prepared by Transport Modellers Alliance (TMA), in relation to the proposed RMS road works, associated with the airport upgrade. **Table 1** overleaf presents a comparison of the peak hour traffic volumes between this assessment and TMA’s report.

TABLE 1				
EXISTING (2018) PEAK HOUR TRAFFIC DEMANDS				
Intersection Approach	TSA Report (This Study)		TMA Report (Previous Precinct Study)	
	AM PEAK	PM PEAK	AM PEAK	PM PEAK
O’Riordan Street (North)	776	843	673	1089
O’Riordan Street (South)	1916	1460	2187	1376
Bourke Road	489	459	418	584

The minor differences in traffic volumes reflected in **Table 1**, indicates that the existing conditions of the adjoining road network adjacent to the subject site is not expected to vary to any significant extent compared to the assessment presented in the previous study undertaken by TMA. Indeed, computer based intersection analysis programs such as SIDRA are generally not sensitive to such minor fluctuations in traffic demand. In this regard, the SIDRA results presented within the TMA report associated with the existing road network operational performance is still applicable for the purposes of this study.

Based on TMA’s traffic and transport study, the junction of O’Riordan Street and Bourke Road currently operates with an overall intersection level of service ‘B’ during the morning peak hour period and a level of service ‘C’ during the evening peak hour period. Such levels of service is defined within RMS’ *Guide to Traffic Generating Developments* as being good and satisfactory operating conditions for the AM and PM peak periods respectively.

In addition to the above, whilst traffic demands within O’Riordan Street are significant during peak periods, commensurate with their arterial function, traffic flows are punctuated by the operation of traffic signals to the north and south of subject site (within O’Riordan Street) at Bourke Road and Coward Street. This punctuation of traffic flows provides gaps in the O’Riordan Street southbound traffic stream thereby allowing motorists to undertake left turn movements from the subject site to the adjoining State Road with a good level of safety and efficiency.

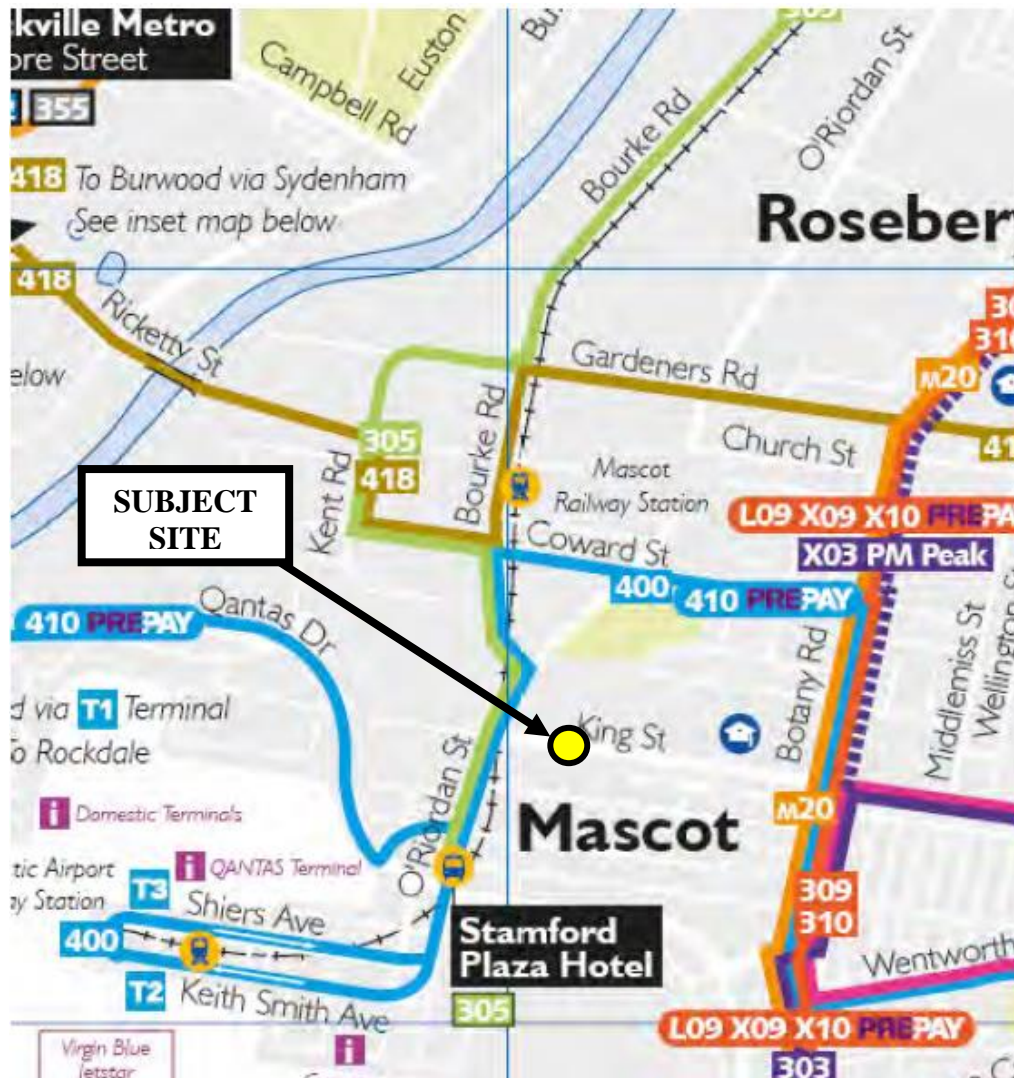
4.3 Public Transport

The subject site is located approximately 400m to the south of Mascot Railway Station. This Station forms part of the Airport and South Line accommodating services between Town Hall and Macarthur with 10 to 15 minute frequencies during peak commuter and business periods. The subject site is also located within close proximity to the following bus services illustrated overleaf in Figure 5 and summarised below:

- Route 305 operates between Stamford Plaza Hotel and Railway Square;
- Route 400 operates between Burwood and Bondi Junction via the airport, Eastgardens and the University of NSW;
- Route 410 operates between Rockdale and Bondi Junction via Eastgardens and the University of UNSW; and

- Route 418 operates between Kingsford and Burwood via Mascot, Sydenham & Dulwich Hill.

FIGURE 5
BUS SERVICES IN THE VICINITY OF THE SITE



Source: Transport Modellers Alliance' Traffic and Transport Assessment (West Connex Enabling Works – Airport West)

The abovementioned bus services provide approximate combined frequencies of approximately 20 minutes during commuter peaks and business periods.

4.4 Pedestrian Infrastructure

Paved footways are provided along both sides of O'Riordan Street and Bourke Road. Signalised crossings linking these paths are provided over the northern and western approaches of the intersection of O'Riordan Street and Bourke Road, facilitating efficient pedestrian connectivity between the subject site and public transport in the surrounding area.

5. PROJECTED TRAFFIC CONDITIONS

5.1 Traffic Generation

5.1.1 Current Site Generation

Section 2.3 of this report indicated that the subject site currently accommodates a number of commercial office land uses. Based on the aerial imagery provided within Six Maps, it would appear that the existing buildings on site occupy approximately 2/3 of the subject site. In this regard, these buildings are assumed to provide a consolidated internal office floor space of approximately 11,347m² (i.e. 2/3 of the site area).

In order to undertake an assessment of the previous traffic generating ability of the site, reference is made to the Roads & Maritime Services' (RMS) *Guide to Traffic Generating Developments*. This publication provides the following peak hour traffic generation rates relevant to the existing developments on site:

Commercial

2 peak hour trips per 100m² Gross Floor Area

Based on an estimated 11,347m² of existing commercial GFA, the following calculations are provided based on the above RMS rates:

$$(11,347\text{m}^2 / 100\text{m}^2) \times 2 = 226.9 \text{ (say 227) trips}$$

The current site developments are therefore estimated to generate in the order of 227 peak hour trips to and from the site.

5.1.2 Projected Development Traffic Generation

The Roads & Maritime Services' (RMS) *Guide to Traffic Generating Developments* recommends a traffic generation rate of 0.4 peak hour vehicle trips per unit for a Motel, which is what has been adopted for hotel/serviced apartment component of the subject development, as it is assumed to have similar characteristics.

Based on a combined total of 815 units (562 serviced apartments and 253 hotel rooms), the subject development is projected to generate up to 326 peak hour vehicle trips to and from the site, which represents 99 trips over and above the existing site generation.

5.2 General Discussion of Transport Impacts

It has been previously mentioned that the future (2021) external traffic impacts of the proposed development and indeed, the surrounding precincts have been assessed by others as part of the airport upgrade. One of the studies that formed part of this assessment is the *Traffic and Transport Assessment (West Connex Enabling Works – Airport West)* prepared by Transport Modellers Alliance (TMA).

Table 2 summarises the projected 2021 peak hour traffic volumes at the junction of O’Riordan Street and Bourke Road in the immediate vicinity of the site, which incorporates traffic from the subject and adjoining land uses, as detailed within Transport Modellers Alliance’s *Traffic and Transport Assessment (West Connex Enabling Works – Airport West)*.

TABLE 2 FUTURE (2021) PEAK HOUR TRAFFIC DEMANDS		
Intersection Approach	TMA’s <i>Traffic and Transport Assessment (West Connex Enabling Works – Airport West)</i>	
	AM PEAK	PM PEAK
O’Riordan Street (North)	910	1110
O’Riordan Street (South)	2373	1615
Bourke Road	467	658

Table 3 provides a summary of the 2021 of the projected level of service as detailed within Transport Modellers Alliance’s *Traffic and Transport Assessment (West Connex Enabling Works – Airport West)*, which is based on the abovementioned peak hour traffic demands and the future planned road layout as previously depicted in **Figure 3** of this report.

TABLE 3 PROJECTED (2021) OPERATIONAL PERFORMANCE AT THE JUNCTION OF O’RIORDAN STREET AND BOURKE ROAD DURING PEAK HOUR PERIODS		
TMA’s <i>Traffic and Transport Assessment (West Connex Enabling Works – Airport West)</i>	AM PEAK	PM PEAK
Delay	24 seconds	31 seconds
Level of Service	B	C

Table 3 indicates that the junction of O’Riordan Street and Bourke Road is projected to continue to operate with a good/satisfactory level of service with spare capacity based on 2021 peak hour traffic demands.

The impact of the subject development therefore on these projected conditions is simply the addition of 99 vehicle trips over and above that which is generated by the current site land use. Such an impact is negligible.

Therefore, any assessment of the subject development and its impact is most likely to be a factor of the level of safety afforded by the site access arrangements, being generally a factor of the provision of sight distance between the frontage road and the site access driveway, which has been previously assessed to be appropriate. Further, this coupled with the existing central median within O’Riordan Street restricting access movements to left in/left out, further assists with the safety and efficiency of turning movements to and from the site. This is also assisted by the regular gaps within the southbound O’Riordan Street traffic flow created by the synchronisation of the existing traffic signals along O’Riordan Street.

6. CONCLUSION

This Practice has undertaken an assessment of the potential traffic and transport implications associated with the Planning Proposal to redevelop land at 146 - 154 O’Riordan Street, Mascot. Based on this assessment, the following conclusions are now made:

- The subject proposal involves increasing building height controls with respect to Botany LEP 2013 to allow for a mixed use development;
- The surrounding road network operates with a good level of service during peak periods;
- The subject development has been projected to generate in the order of 326 peak hour vehicle trips to and from the subject site, which is estimated to be approximately 99 trips over and above the existing site generation; and
- The strategic planning process for surrounding precincts associated with the redevelopment of Sydney Airport has considered the broader traffic and transport infrastructure requirements to service the additional demand associated with future land uses (including the proposed development). The proposed development is generally in accordance with the strategic planning intent for the subject land and the broader impacts of the development have therefore been considered in past studies.

Having regard to the conclusions abovementioned, this Practice is satisfied that the proposed development is worthy of support in relation to the traffic and transport issues discussed.

APPENDIX 1



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : TSA

Job No/Name : 6978 MASCOT Bourke Rd

Day/Date : Thursday 29th November 2018

Lights

Lights	NORTH		WEST		SOUTH		TOT
	O'Riordan St	Bourne Rd	O'Riordan St				
Time Per	L	H	L	H	L	H	
0700 - 0715	174	7	10	78	129	323	721
0715 - 0730	139	9	4	113	124	315	704
0730 - 0745	185	13	5	102	129	286	720
0745 - 0800	154	14	7	80	141	302	698
0800 - 0815	178	6	3	100	150	300	737
0815 - 0830	184	10	9	98	143	284	728
0830 - 0845	190	5	6	82	137	316	736
0845 - 0900	136	10	7	99	124	273	649
Per End	1340	74	51	752	1077	2399	5693

Trucks

Trucks		NORTH		WEST		SOUTH		TOT
		O'Riordan	Bourke Rd	O'Riordan				
Time	Per	L	H	L	H	L	L	
07:00 - 07:15		7	1	0	27	33	12	80
07:15 - 07:30		9	0	3	23	18	18	71
07:30 - 07:45		13	0	2	17	18	15	65
07:45 - 08:00		14	0	1	23	28	15	81
08:00 - 08:15		6	0	1	28	20	6	61
08:15 - 08:30		10	0	0	26	25	15	76
08:30 - 08:45		5	0	1	24	24	10	64
08:45 - 09:00		10	0	0	23	22	19	74
Per End		74	1	8	191	188	110	572

Combined

Combined	NORTH		WEST		SOUTH		TOT
	O'Riordan	H	Bourke Rd	H	O'Riordan	H	
Time Per	I	H	L	H	L	I	
07:00 - 07:15	181	8	10	105	162	335	801
07:15 - 07:30	148	9	7	136	142	333	775
07:30 - 07:45	198	13	7	119	147	301	785
07:45 - 08:00	168	14	8	103	169	317	779
08:00 - 08:15	184	6	4	128	170	306	788
08:15 - 08:30	194	10	9	124	168	299	804
08:30 - 08:45	195	5	7	106	161	326	800
08:45 - 09:00	146	10	7	122	146	292	723
Per End	1414	75	59	943	1265	2509	6265

Lights

Liquids	NORTH		WEST		SOUTH		TOT
	O'Riordan	Bourne Rd	O'Riordan	T	O'Riordan	T	
Peak Per	T	R	T	R	T	R	
0700 - 0800	552	43	25	373	523	1225	2843
0715 - 0815	656	42	19	395	544	1203	2859
0730 - 0830	701	43	24	380	553	1172	2863
0745 - 0845	706	35	25	360	571	1202	2899
0800 - 0900	688	31	25	379	554	1173	2850

Trucks

Trucks	NORTH	WEST	SOUTH
	O'Riordan	Bourke Rd	O'Riordan
Peak Per	T	H	T
07000 - 08000	43	1	6
07015 - 0815	42	0	7
07030 - 0830	43	0	4
0745 - 0845	35	0	3
0800 - 0900	31	0	2

Combined

[illegible]

DEAN

Peds	NOHIT		WEST		SOUTH		TOT
	O'Riordan St	Bourne Rd	O'Riordan St				
Time Per							
0700 - 0715	9	4	0				13
0715 - 0730	20	8	0				28
0730 - 0745	20	3	0				23
0745 - 0800	33	7	0				40
0800 - 0815	25	8	0				33
0815 - 0830	38	10	0				48
0830 - 0845	18	2	0				20
0845 - 0900	26	8	0				34
Per End	189	50	0				239

PEAK N

AM PEAK
0745 - 0845

Bourke Rd

104 385 489 →

3 25 28 —

PEAK

O'Riordan St

35
741
776

←

35
706
741

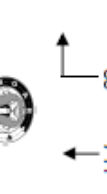
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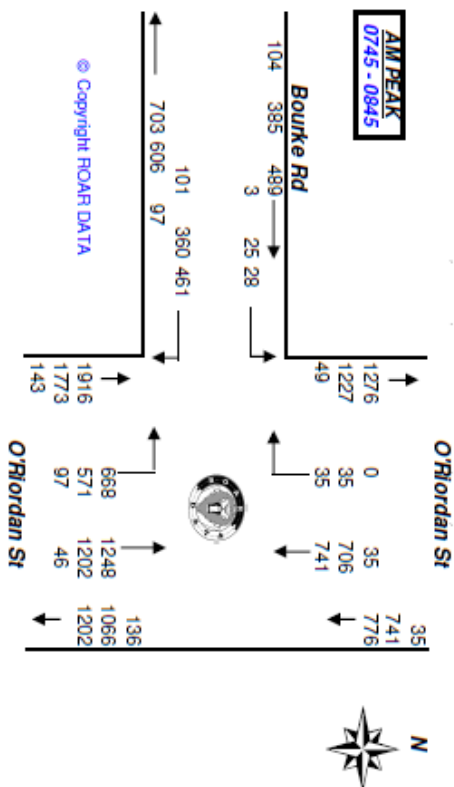
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1276
1227
49

←



Peak Per	NORTH	WEST	SOUTH	TOT
	O'Riordan St	Bourne Rd	O'Riordan St	
0700 - 0800	82	22	0	104
0715 - 0815	98	26	0	124
0730 - 0830	116	28	0	144
0745 - 0845	114	27	0	141
0800 - 0900	107	28	0	135
PEAK HH	114	27	0	141





R.O.A.R. DATA

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Job No/Name : 6978 MASCOT Bourke Rd

Day/Date : Thursday 29th November 2018

Lights

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	222	9	7	98	94	214	644		
1615 - 1630	171	6	8	91	90	261	627		
1630 - 1645	121	14	8	64	99	228	534		
1645 - 1700	172	14	9	71	105	223	594		
1700 - 1715	215	14	8	74	103	231	645		
1715 - 1730	166	8	7	83	109	239	612		
1730 - 1745	135	4	11	102	105	248	605		
1745 - 1800	262	5	4	126	98	234	729		
Per End	1464	74	62	709	803	1878	4990		

Lights

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1700	686	43	32	324	388	926	2399		
1615 - 1715	679	48	33	300	397	943	2400		
1630 - 1730	674	50	32	292	416	921	2385		
1645 - 1745	688	40	35	330	422	941	2456		
1700 - 1800	778	31	30	385	415	952	2591		

Trucks

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	5	0	1	6	17	11	40		
1615 - 1630	10	1	1	11	12	14	49		
1630 - 1645	14	0	1	7	14	8	44		
1645 - 1700	6	0	1	6	17	15	45		
1700 - 1715	14	0	0	3	17	12	46		
1715 - 1730	8	0	1	11	16	8	44		
1730 - 1745	2	0	0	16	10	6	34		
1745 - 1800	9	1	1	12	15	9	47		
Per End	68	2	6	72	118	83	349		

Trucks

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1700	35	1	4	30	60	48	178		
1615 - 1715	44	1	3	27	60	49	184		
1630 - 1730	42	0	3	27	64	43	179		
1645 - 1745	30	0	2	36	60	41	169		
1700 - 1800	33	1	2	42	58	35	171		

Combined

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	227	9	8	104	111	225	684		
1615 - 1630	181	7	9	102	102	275	676		
1630 - 1645	135	14	9	71	113	236	578		
1645 - 1700	178	14	10	77	122	238	639		
1700 - 1715	229	14	8	77	120	243	691		
1715 - 1730	174	8	8	94	125	247	656		
1730 - 1745	137	4	11	118	115	254	639		
1745 - 1800	271	6	5	138	113	243	776		
Per End	1532	76	68	781	921	1961	5339		

Combined

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1700	721	44	36	354	448	974	2577		
1615 - 1715	723	49	36	327	457	992	2584		
1630 - 1730	716	50	35	319	480	964	2564		
1645 - 1745	718	40	37	366	482	982	2625		
1700 - 1800	811	32	32	427	473	987	2762		

PEAK HH	7/8	31	30	385	415	952	2391
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PEAK HH	33	1	2	42	58	35	171
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PEAK HH	8/11	32	32	427	473	987	2762
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Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	17		5		0		22		
1615 - 1630	23		8		0		31		
1630 - 1645	15		12		0		27		
1645 - 1700	11		7		0		18		
1700 - 1715	42		17		0		59		
1715 - 1730	23		4		0		27		
1730 - 1745	29		8		0		37		
1745 - 1800	38		15		0		53		
Per End	198		76		0		274		

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	17		5		0		22		
1615 - 1630	23		8		0		31		
1630 - 1645	15		12		0		27		
1645 - 1700	11		7		0		18		
1700 - 1715	42		17		0		59		
1715 - 1730	23		4		0		27		
1730 - 1745	29		8		0		37		
1745 - 1800	38		15		0		53		
Per End	198		76		0		274		

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	17		5		0		22		
1615 - 1630	23		8		0		31		
1630 - 1645	15		12		0		27		
1645 - 1700	11		7		0		18		
1700 - 1715	42		17		0		59		
1715 - 1730	23		4		0		27		
1730 - 1745	29		8		0		37		
1745 - 1800	38		15		0		53		
Per End	198		76		0		274		

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1700	66		32		0		98		
1615 - 1715	91		44		0		135		
1630 - 1730	91		40		0		131		
1645 - 1745	105		36		0		141		
1700 - 1800	132		44		0		176		
PEAK HH	132		44		0		176		

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	5		1		6		11		
1615 - 1630	10		1		11		14		
1630 - 1645	14		1		7		14		
1645 - 1700	6		0		6		17		
1700 - 1715	14		0		3		17		
1715 - 1730	8		0		11		16		
1730 - 1745	2		0		16		10		
1745 - 1800	9		1		12		15		
Per End	68		2		72		118		

Time Per	NORTH			WEST			SOUTH		
	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St	O'Riordan St	Bourke Rd	O'Riordan St
1600 - 1615	227	9	8	104	111	225	684		
1615 - 1630	181	7	9	102	102	275	676		
1630 - 1645	135	14	9	71	113	236	578		
1645 - 1700	178	14	10	77	122	238	639		
1700 - 1715	229	14	8	77	120	243	691		
1715 - 1730	174	8	8	94	125	247	656		
1730 - 1745	137	4	11	118	115	254	639		
1745 - 1800	271	6	5	138	113	243	776		
Per End	1532	76	68	781	921	1961	5339		

