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Traffic Impact Assessment Report

Proposed Residential Development

2-6 Thiele Street, Doncaster

February 2012

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TABLE OF CONTENTS

Chapter / Section	Page No.
1 INTRODUCTION	1
2 EXISTING CONDITIONS	2
2.1 Subject Site and Surrounds.....	2
2.2 Road Network	2
2.3 Traffic Volumes.....	2
2.4 Parking Conditions.....	4
2.5 Pedestrian Conditions	5
2.6 Sustainable Transport	5
2.7 Crash Analysis.....	6
3 THE PROPOSAL	7
4 PARKING ASSESSMENT	8
4.1 Statutory Assessment.....	8
4.2 Clause 55.03 (ResCode) Provisions.....	8
4.3 Parking Supply and Allocation	9
4.4 Parking Layout and Access.....	9
4.5 Bicycle Parking	10
4.6 Refuse Collection.....	10
5 TRAFFIC ASSESSMENT	11
5.1 Traffic Generation	11
6 CONCLUSIONS	12
APPENDICES	
Appendix A. Survey Results.....	13

1 INTRODUCTION

Ratio Consultants was commissioned by Penbury Lodge Pty Ltd to assess the traffic and parking implications of the proposed four storey residential development at 2-6 Thiele Street, Doncaster.

This report has been prepared to address the parking and traffic needs of the proposed development and it will be submitted to Manningham City Council.

The report is based on surveys and observations in the vicinity of the site, and of previous studies for similar developments elsewhere in Melbourne.

2 EXISTING CONDITIONS

2.1 SUBJECT SITE AND SURROUNDS

The subject site is located on the eastern side of Thiele Street in Doncaster. The site is rectangular in shape and comprises three separate property parcels being No. 2, 4 and 6 Thiele Street, which are all currently occupied by single storey dwellings. Overall the site has a frontage to Thiele Street of approximately 55.9 metres and a depth of approximately 39.6 metres, for an overall site area of approximately 2,214 square metres.

Existing access to the site is via three separate crossovers to/from Thiele Street.

Land uses in the vicinity of the site are predominantly residential in nature with the exception of a dentist's surgery adjoining to the south. The Manningham City Council Municipal Offices (positioned 300 metres to the west of the site) and the Westfield Shopping Centre are further to the west. Doncaster Secondary College is located to the north east of the site and can be accessed off Ibis Street.

The subject site is included within a Residential 1 Zone under the Manningham Planning Scheme and is affected by a Design and Development Overlay, Schedule 8 (DDO8).

2.2 ROAD NETWORK

Thiele Street is a municipal road and functions as a local road that runs in a northerly direction from Doncaster Road to Ambrose Street and is subject to a 50 km/h speed limit. It has a 7.0 metre wide carriageway which caters for one traffic lane in each direction. Kerbside parallel parking is permitted along both sides of Thiele Street. Access to/from Thiele Street at Doncaster Road is physically restricted by a median in Doncaster Road to left in and left out movements only. Constructed footpaths are provided on both sides of the road.

Doncaster Road is a VicRoads road and functions as a primary arterial road that generally runs in an east-west direction between Burke Road, Kew East and Old Warrandyte Road, Donvale. It has a divided carriageway with three lanes in each direction and a 1.5 metre wide grass median. On both sides of the road the kerbside lane acts as a bus lane between 7:00am - 9:00am and 4:00pm - 6:00pm. Doncaster Road has a speed limit of 70 km/h. Doncaster Road functions as a 'bus priority' route as per VicRoads SmartRoads Network Operating Plan (dated March 2010). Constructed footpaths are provided on both sides of the road.

2.3 TRAFFIC VOLUMES

Ratio Consultants Pty Ltd initially conducted turning movement surveys in relation to a different proposal in the vicinity of the site at the following intersections on Friday 20 February 2009 between 7:00am and 10:00am and 2:00pm to 6:00pm:

- Doncaster Road / Thiele Street
- Thiele Street / Ibis Street

Refer to Figure 2.1 of Appendix A for a summary of the AM and PM peak period survey results. The results of the surveys demonstrated that:

- The overall morning peak hour was recorded between 8:00am and 9:00am and the afternoon peak hour between 3:00pm and 4:00pm (the early afternoon peak hour reflects the presence of the Doncaster Secondary College).
- There was a moderate level of traffic activity at the Doncaster Road/Thiele Street intersection with a total of 157 vehicles turning left into/from Thiele Street in the morning peak hour, with the dominant movement being the left turn movement into Thiele Street (92 movements) from Doncaster Road.
- During the afternoon peak hour there were a total of 100 vehicles turning left into/from Thiele Street, with the dominant movement again being the left turn into Thiele Street (72 movements) from Doncaster Road.

Ratio Consultants Pty Ltd commissioned additional surveys on Wednesday 22 February 2012 between 7:00am and 9:00am and 4:00pm and 6:00pm to confirm traffic conditions. The surveys were conducted at the previously surveyed locations, as well as the Thiele Street / Curlew Street intersection.

Refer to Figure 2.2 of Appendix A for a summary of the AM and PM peak period survey results. The results of the surveys demonstrated that:

- The morning peak hour was again recorded between 7:00am and 8:00am at the Doncaster Road / Thiele Street and Thiele Street / Curlew Court intersections, and between 8:00am and 9:00pm at the Thiele Street / Ibis Street. The overall afternoon peak hour was between 4:00pm and 5:00pm.
- There was a lower level of traffic activity at the Doncaster Road / Thiele Street intersection in the AM peak hour as compared to the previous survey, with a total of 90 vehicles turning left into/from Thiele Street in the morning peak hour, with the dominant movement being the left turn movement into Thiele Street (55 movements) from Doncaster Road.
- During the afternoon peak hour there were a total of 125 vehicles turning left into/from Thiele Street, with the dominant movement again being the left turn into Thiele Street (76 movements) from Doncaster Road.
- A total of 14 vehicle movements were recorded turning to/from Curlew Court in the AM peak hour, with the dominant movement being left turns from Curlew Court, with six movements recorded. A total of 15 movements were recorded during the PM peak hour, with the movements fairly evenly split around the intersection (refer Figure 2.2).
- A total of 200 movements were recorded at the Thiele Street / Ibis Street intersection during the AM peak hour, with the dominant movement being left turn from Thiele Street with a total of 55 movements recorded. A total of 141 movements were recorded in the PM peak hour, with the dominant movement being northbound along Thiele Street, accounting for 51 of the recorded movements.

The results of the survey demonstrate that there are neither significant capacity constraints at the intersections nor any significant growth in traffic volumes since 2009.

2.4 PARKING CONDITIONS

Two hour time limited parallel parking is permitted along the northern side of Doncaster Road between J.J. Tully Drive and Thiele Street outside of No Stopping times between 7 - 9am and 4 - 6pm Monday to Friday. Unrestricted parallel parking is permitted along both sides of Thiele Street.

Curlew Court and Ibis Street also have unrestricted parallel parking with the exception of the south side of Ibis Street being a No Stopping Zone between 8am - 4pm School Days and 8am - 12:30pm Sundays.

Ratio Consultants Pty Ltd previously arranged for parking occupancy surveys to be conducted within the vicinity the site as shown diagrammatically in Figure 2.3 of Appendix A. The surveys were conducted on Friday 20 February 2009 between 7:00am and 7:00pm and Saturday 21 February 2009 from 10:00am to 4:00pm. As with the traffic surveys completed in 2009, these surveys were related to a different proposal in the vicinity of the site.

In summary, the survey results demonstrated the following:

Friday 20 February 2009

- There were a minimum of 63 and a maximum of 87 on-street parking spaces recorded over the survey period.
- The overall peak occupancy occurred at 10:00am when a total of 20 spaces (25%) of an available capacity of 79 spaces was recorded.
- The unrestricted parking along the north side of Ibis Street recorded 100% occupancy levels between 9:00am and 3:00pm.

Saturday 21 February 2009

There were a minimum of 87 on-street parking spaces available on a Saturday within close proximity of the subject site. This increase in availability is due to No Stopping restrictions applying only during weekdays.

- The overall peak occupancy occurred at 3:00pm when a total of 11 spaces (13%) of an available capacity of 87 spaces was recorded.
- The majority of this parking was located in Curlew Court and along Thiele Street.

Ratio Consultants Pty Ltd commissioned additional surveys on Wednesday 22 February 2012 in the areas as shown in Figure 2.4 of Appendix A between 7:00am and 7:00pm to confirm parking supply and demand in the vicinity of the site. The detailed survey results are show in Table 2.1 of Appendix A.

In summary, the survey demonstrated the following:

- There were a minimum of 127 and a maximum of 150 on-street parking spaces recorded over the survey period.
- The overall peak occupancy occurred at 2:00pm when a total of 38 spaces (25%) of an available capacity of 150 spaces was recorded.

- Parking demands were relatively evenly spread throughout the survey area with somewhat higher demands along Thiele Street.

The results of the survey confirm that on-street parking demand in the vicinity of the site is reasonably low during typical weekday and weekend periods.

2.5 PEDESTRIAN CONDITIONS

Ratio Consultants Pty Ltd commissioned a pedestrian movement count along the site's frontage to Thiele Street on Wednesday 22 February between 7:00am and 9:00am and from 4:00pm to 6:00pm.

In summary, the survey results demonstrated the following:

- A total of 60 pedestrian movements were recorded in the two-hour morning period, the majority being northbound with 52 movements, comprising 49 students and three adults.
- A total of 10 pedestrian movements were recorded in the two-hour evening period, with nine being northbound movements (eight adults and one student).

The results of the survey indicate that there are relatively high (school student) pedestrian volumes across the site's frontage during the morning commuter peak, but not in the afternoon commuter peak.

2.6 SUSTAINABLE TRANSPORT

The subject site has very good access to public transport.

The following bus routes operate along Doncaster Road, approximately 100 metres south of the site:

- Route 207: City - Donvale via Doncaster Road;
- Route 282: Manningham Mover via Templestowe Village Shopping Centre, Shopping town;
- Route 295: Box Hill - The Pines via Doncaster, Templestowe;
- Route 307: City - Mitcham via Doncaster Road (Freeway Express); and
- Route 316: City (Russell St) - Deep Creek via Eastern Freeway, Doncaster Road.

An additional 12 bus routes operate from the Westfield Shopping Centre approximately 800 metres west of the site. These routes include: 903, 281, 305, 285, 200, 201, 203, 205, 279, 291, 293 and 364.

2.7 CRASH ANALYSIS

A review has been conducted of VicRoads 'Crashstats' data base for the most recent five year period of available data from 1 January 2006 to 31 December 2010 for any reported casualty crashes in the vicinity of the subject site. This review concluded that there had been two casualty crashes on Doncaster Road, one to the east and one to the west of Thiele Street and three casualty crashes at the intersection of Doncaster Road and Thiele Street. Two of the five crashes were classified as 'serious injury' crashes, while the others were 'other injury' crashes. Two of the crashes at the intersection of Doncaster Road and Thiele Street involved pedestrians; the remaining three involved vehicles leaving the carriageway and hitting objects.

Accordingly, it is considered that there is no obvious pattern of casualty crashes on the road network in the vicinity of the site.

3 THE PROPOSAL

It is proposed to demolish the existing residential dwellings on each lot and construct a new four storey residential building comprising a total of 55 dwellings and associated multi-level basement car parking.

The proposed development will incorporate the following components:

- 55 x dwellings over four levels comprising:
 - 8 x one-bedroom dwellings;
 - 6 x one-bedroom + study dwellings;
 - 29 x two-bedroom dwellings;
 - 9 x two-bedroom + study dwellings;
 - 1 x three-bedroom dwellings; and
 - 2 x three-bedroom dwellings + study dwellings.
- 84 x car spaces over two basement levels comprising:
 - Basement level 1: 39 car spaces (including six tandem pairs)
 - Basement level 2: 45 car spaces (including three tandem pairs)

It is proposed to construct a new double-width crossover into the site to/from Thiele Street at the north western boundary of the site. Other existing crossovers to the site will be removed and the kerb and naturestrip will be reinstated. This will result in the creation of three additional kerbside parking spaces along Thiele Street.

Resident storage and waste storage areas will be provided in the basement car park. Parking for up to 37 bicycles will be provided in the basement car park.

4 PARKING ASSESSMENT

4.1 STATUTORY ASSESSMENT

The Manningham Planning Scheme (Clause 52.06) requires parking to be provided at the rate of 2 spaces per dwelling. This equates to a statutory parking requirement of 110 parking spaces for the proposed development. With 84 spaces provided in total, the development has a technical parking shortfall against the statutory requirements of 26 spaces.

Under the provisions of Clause 52.06, Council is able to reduce the parking requirements if the applicant can demonstrate that the reduced provision is justified having regard to a number of factors, including:

- the availability of car parking in the locality;
- the availability of public transport in the locality; and
- an empirical assessment of car parking demand.

4.2 CLAUSE 55.03 (RESCODE) PROVISIONS

Car parking requirements for multi-unit residential developments are covered under Clause 55.03 (ResCode) of the Manningham Planning Scheme. ResCode provisions do not strictly apply for the proposed development as it is four storeys in height. However, they are regarded as a useful indicator of likely parking demand for residential apartments. The relevant rates are:

- One resident space per one or two bedroom dwellings;
- Two resident spaces for three or more bedroom dwellings; and
- 1 visitor space for every 5 dwellings.

For the purpose of this assessment, the dwellings with associated study rooms are assessed without a study room as these rooms are considered too small to cater as a bedroom.

Therefore the parking provision required under Clause 55.03-11 is:

52 x one and two-bedroom dwellings @ 1.0 resident space each:	52 spaces
3 x three-bedroom dwellings @ 2.0 resident spaces each:	6 spaces
55 x dwellings @ 1.0 visitor space per every 5 dwellings:	<u>11 spaces</u>
TOTAL:	<u>69 spaces</u>

Accordingly, the development would have a statutory requirement to provide 69 parking spaces if it was assessed under the Clause 55.03-11 of the Manningham Planning Scheme. The proposed provision of 84 car parking spaces results in a surplus of 15 car parking spaces.

4.3 PARKING SUPPLY AND ALLOCATION

The car parking supply consists of two levels of basement car parking with 84 spaces. It is proposed that the spaces be allocated in the following manner:

▪ 1 space to each one-bedroom dwelling	8 spaces
▪ 1 space to each one-bedroom + study dwelling	6 spaces
▪ 1 space to 23 two-bedroom dwellings	23 spaces
▪ 2 spaces to 6 two-bedroom dwellings	12 spaces
▪ 2 spaces to each two-bedroom + study dwelling	18 spaces
▪ 2 spaces to each three-bedroom dwelling	2 spaces
▪ 2 spaces to each three-bedroom + study dwelling	4 spaces
▪ 11 spaces for visitor parking	11 spaces
TOTAL:	<u>84 spaces*</u>

*Note: The tandem spaces are allocated to the two and three-bedroom dwellings that have been allocated two car spaces each.

4.4 PARKING LAYOUT AND ACCESS

All of the parking spaces within the basement car park meet the dimensional requirements of the Manningham Planning Scheme and/or AS/NZS2890.1:2004 with the following dimensions:

- all spaces are 2.6 metres wide by 4.9 metres long (with spaces adjacent to solid walls or kerbs a minimum of 3.2 metres wide);
- all rear tandem spaces are 2.6 metres wide by 5.35 metres long; and
- the aisle widths are 6.4 metres wide.

The vehicular ramp providing access to/from the basement car park from Thiele Street incorporates a transition grade of 1:20 for a distance of 6.0 metres at the top of the ramp, 1:8 for 2.0 metres, a midblock grade of 1:4 for 4.8 metres and a grade transition of 1:8 for the final 2.0 metres leading to/from the basement. The ramp leading from basement level 1 to basement level 2 has a transition grade of 1:8 for 2.0 metres, a midblock grade of 1:4 for 10.0 metres and a grade transition of 1:8 for the final 2.0 metres. The ramps have been designed in accordance with AS/NZS 2890.1:2004.

The ramp profiles provide a minimum headroom clearance of 2.2 metres at the entry levels. This meets the vertical clearance height requirements of AS/NZS 2890.1:2004. A convex mirror has been provided at the bottom of the first ramp and at the top of the second ramp to improve sight distances.

A sightline distance triangle has been provided on both sides of the proposed ramp measuring 2.0 metres along the boundary and extending 2.5 metres into the site. This meets the sightline distance requirements as per AS/NZS 2890.1:2004.

4.5 BICYCLE PARKING

Clause 52.34 of Manningham Planning Scheme which sets the provision of bicycle spaces at the following rates:

- 1 resident bicycle space per five residential dwellings (for developments of four or more storeys); and
- 1 visitor bicycle space per ten residential dwellings (for developments of four or more storeys).

Application of these rates to the proposed development would produce a requirement for 16 bicycle spaces (11 residents and 5 visitors). The application plans show provision for 37 bicycle spaces with 32 resident spaces located in the basement car park (level 1) adjacent to the waste store and 5 visitor spaces located at ground floor level, resulting in an excess of 21 bicycle parking spaces.

4.6 REFUSE COLLECTION

A waste storage area is located within the basement (level 1) car park adjacent to the ramp.

It is proposed that a private waste collection service will be used. A Waste Management Plan is to be prepared to the Responsible Authority.

5 TRAFFIC ASSESSMENT

5.1 TRAFFIC GENERATION

Ratio Consultants conducted traffic surveys at the Canterbury Road/Heathcote Drive intersection in Forest Hill, which provides sole access to/from the Forest Gardens residential development (a 197 residential dwelling development). This survey was undertaken on Thursday 14 February 2002 from 8:00am to 9:00am and 5:30pm to 6:30pm. The development generated 83 (63 outbound and 20 inbound) movements in the morning peak hour, and 97 (72 inbound and 25 outbound) movements in the evening peak hour. This equates to a traffic generation rate per dwelling of 0.42 movements/hour (with 76% outbound) in the morning peak and 0.49 movements per hour (with 26% outbound) in the afternoon peak.

On the basis of the above rates, it is estimated that the proposed apartments will generate up to 6 vehicle trips per day, so the 55 apartments could generate about 330 vehicle trips per day. Generally, about 10 percent of the trips, which equates to about 33 trips, will occur in each of the morning and evening peak hours and trips will be mainly departing in the morning peak (80 percent departing and 20 arriving) and mainly arriving in the afternoon peak (30 percent departing and 70 percent arriving).

The morning peak hour on a typical weekday, the traffic generation will be approximately as follows:

AM PEAK

Arriving trips	7
Departing trips	26
Total trips	33

PM PEAK

Arriving trips	23
Departing trips	10
Total trips	33

The three existing dwellings would be expected to generate in the order to 8 trips per dwelling per day for a total of about 24 daily trips or 2-3 trips in the AM and PM peak hours.

On the basis of current traffic surveys and observations of peak period traffic activity on the adjacent road network, the volume of additional traffic generated by the proposed development (about 33 vehicles per hour) will not create adverse traffic safety or capacity impacts on Thiele Street, Ibis Street, Doncaster Road or the surrounding road network.

6 CONCLUSIONS

Overall the proposed four storey residential development is suitably designed with an excess provision of resident and visitor parking and suitable vehicular access arrangements.

The provision of 84 on-site parking spaces within the basement car parking exceeds the minimum requirements of the Manningham Planning Scheme (ResCode).

The proposed provision of 37 bicycle parking spaces is considered generous and exceeds the requirements of the Manningham Planning Scheme.

The proposal will generate around 33 additional vehicle trips during each of the AM and PM peak periods. This level of additional traffic will not create adverse traffic safety or capacity impacts on Thiele Street, Ibis Street, Doncaster Road or the surrounding road network.

Overall the proposed development is not expected to create adverse traffic or parking impacts in the precinct.

Appendix A. Survey Results

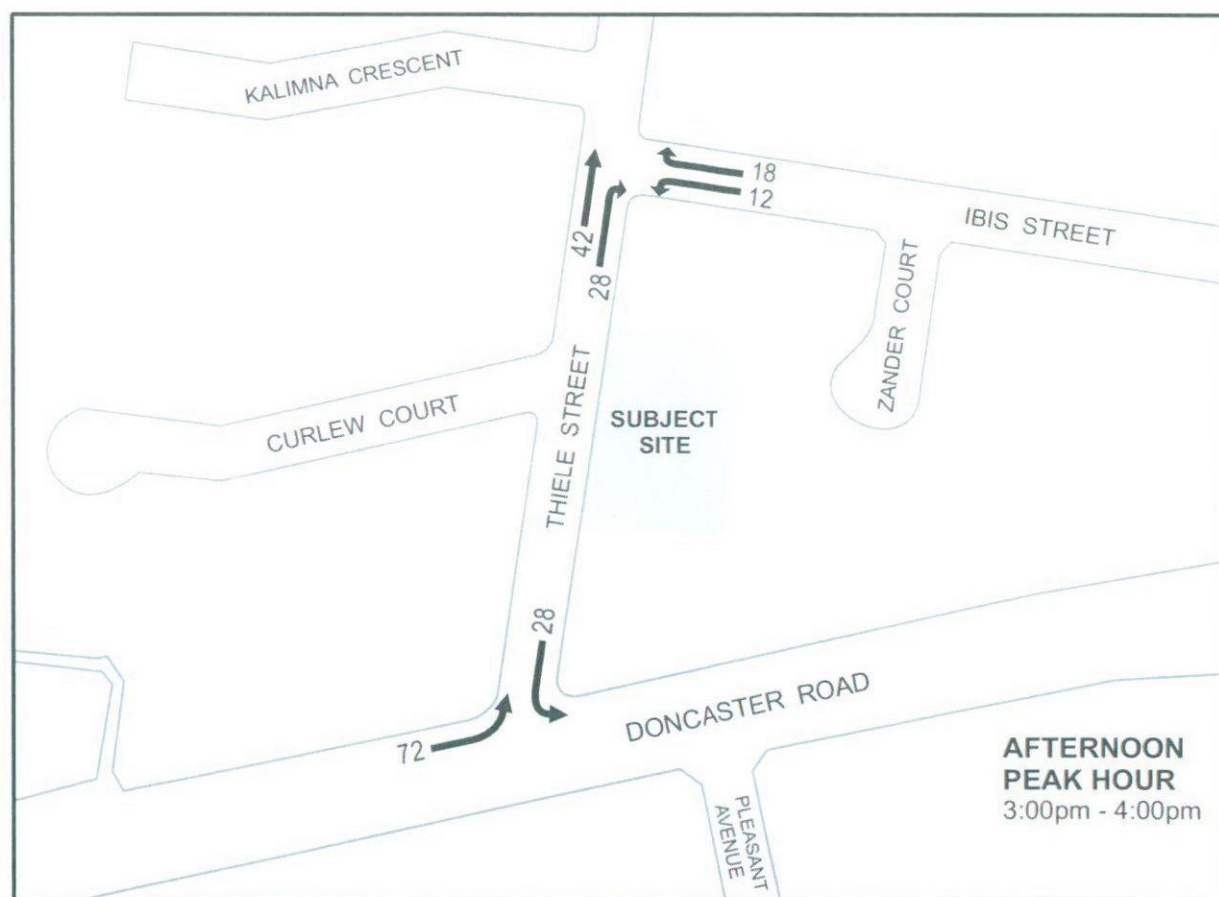
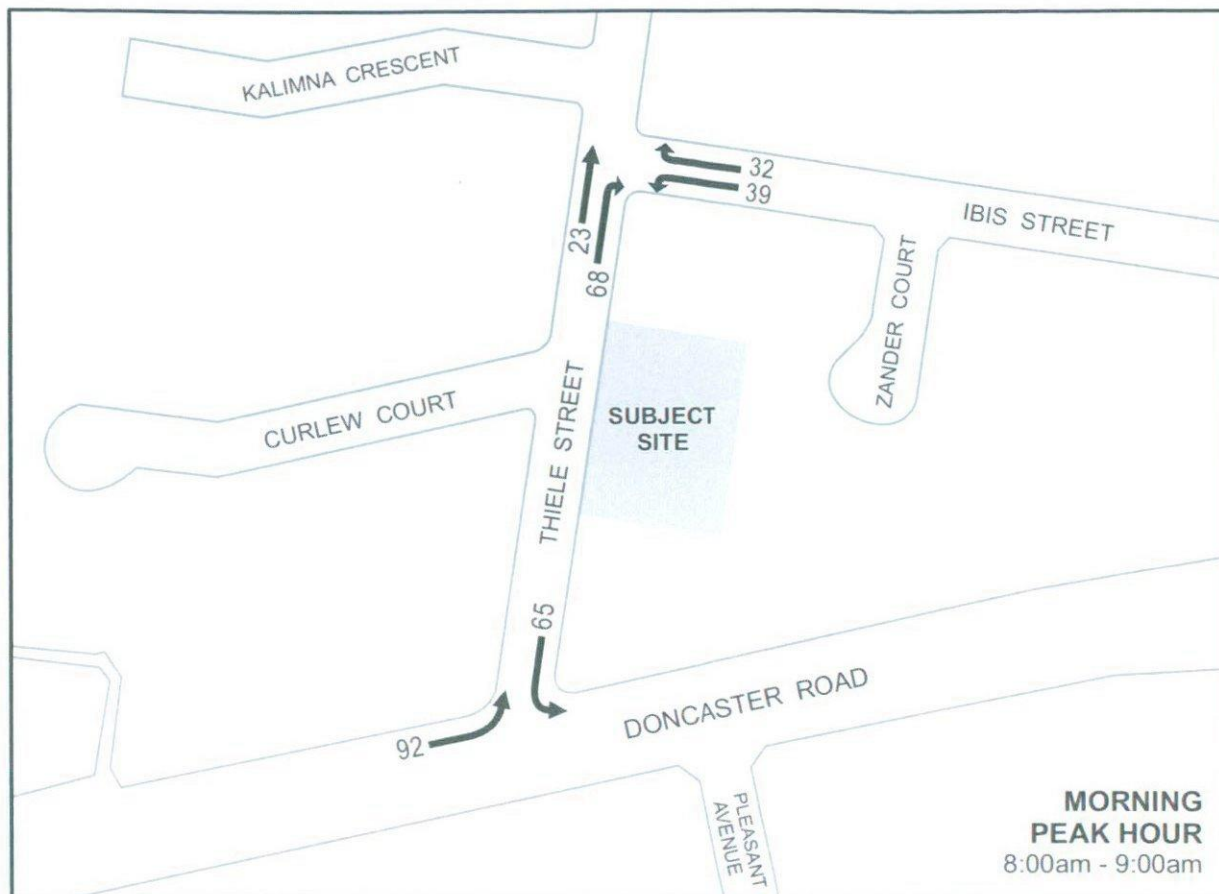


FIGURE 2.1
PEAK HOUR TURNING MOVEMENTS
FRIDAY 20 FEBRUARY, 2009



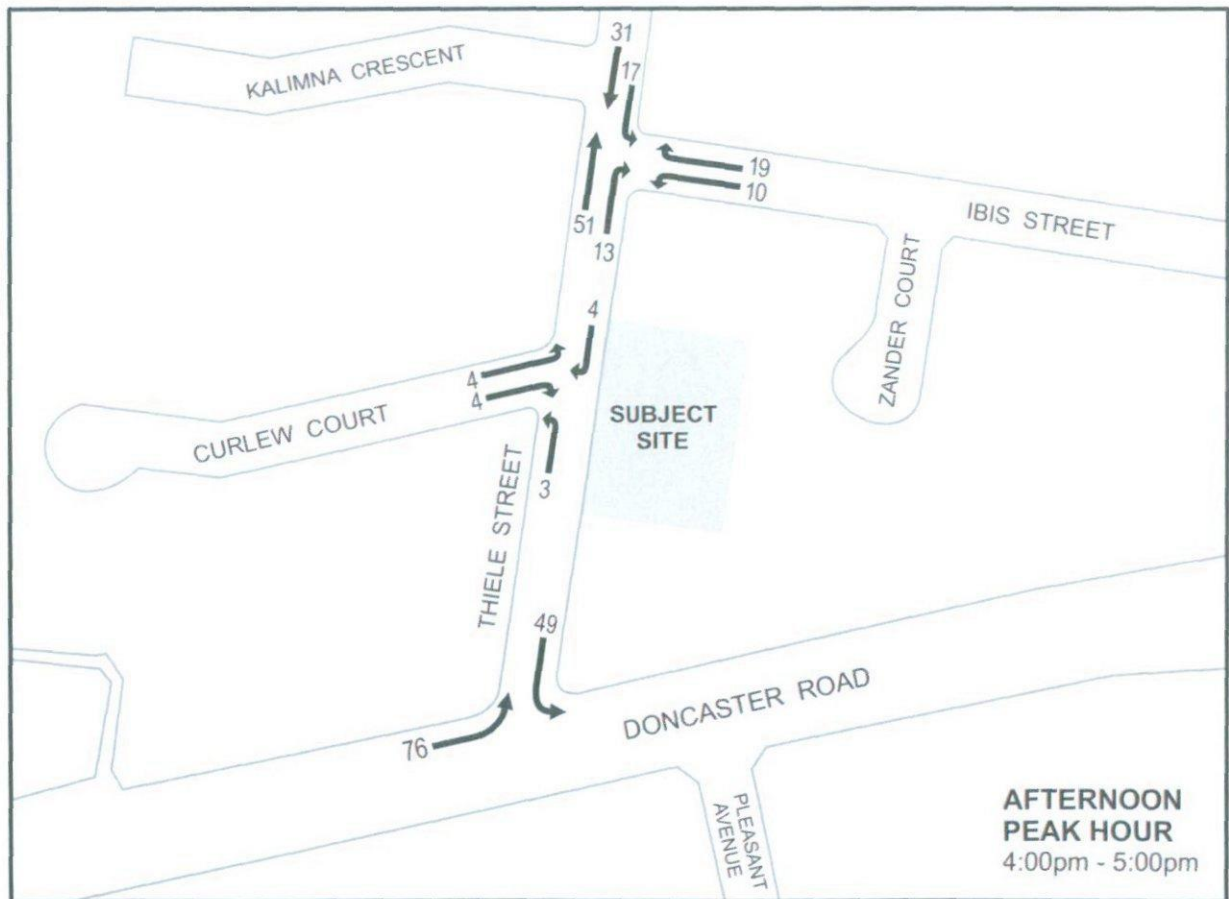
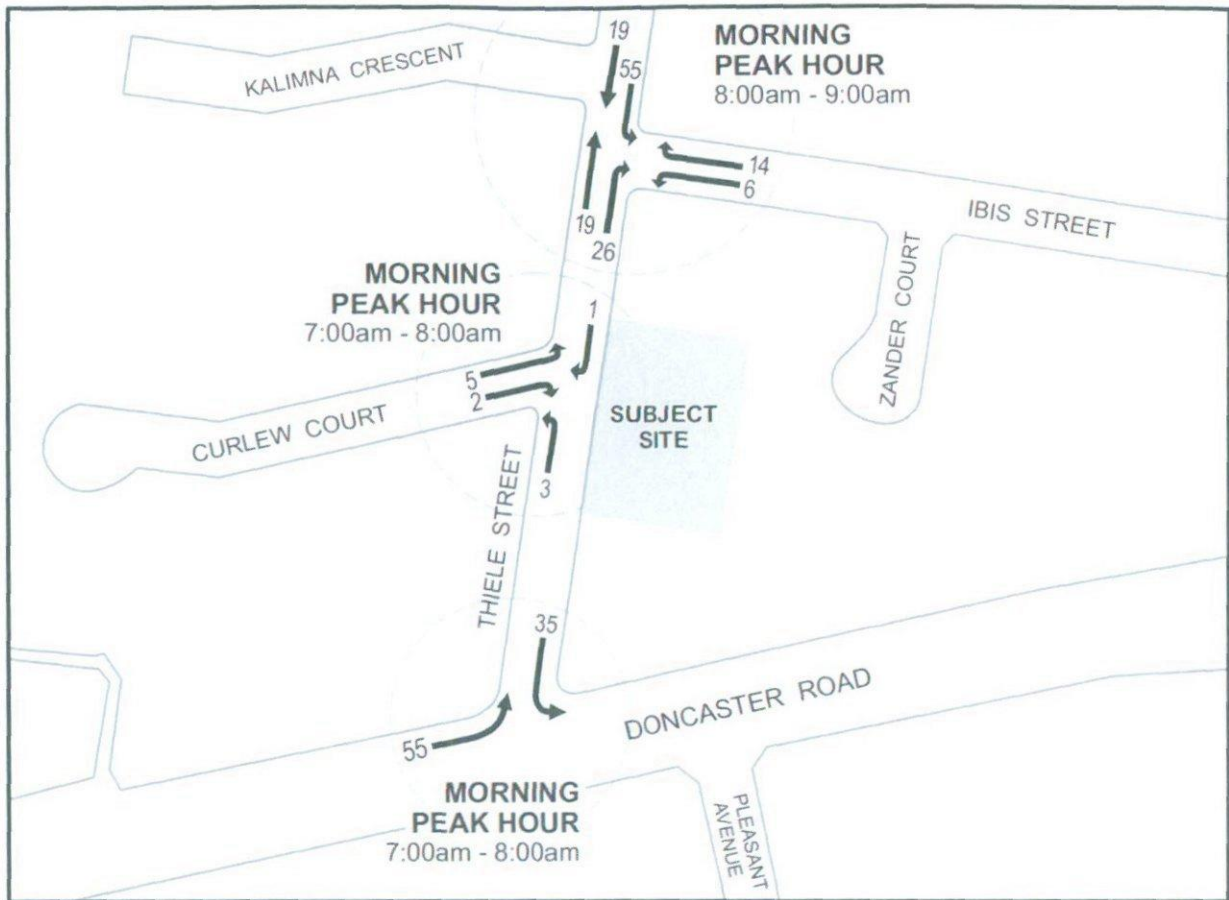
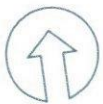
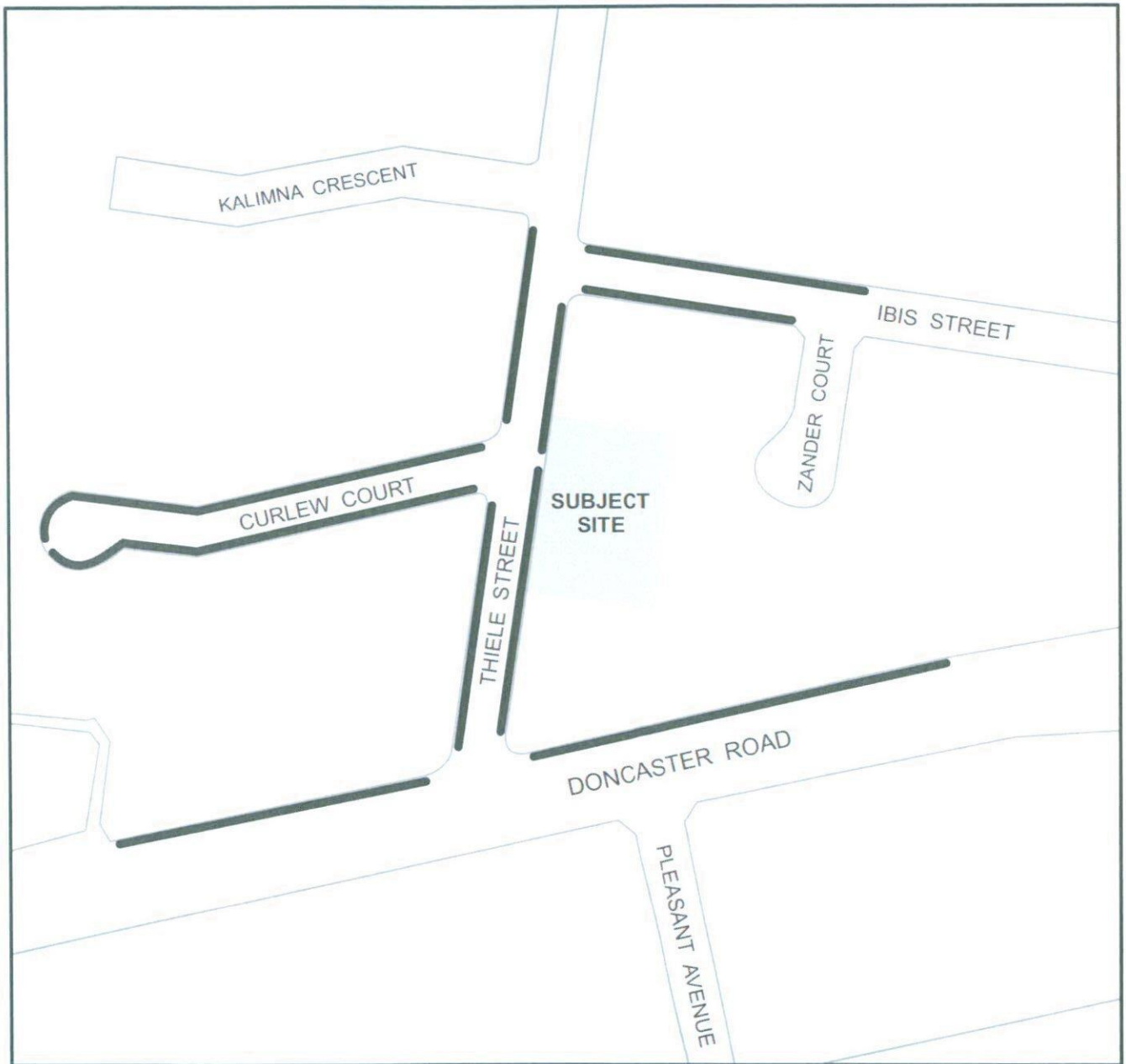


FIGURE 2.2
PEAK HOUR TURNING MOVEMENTS
WEDNESDAY 22 FEBRUARY, 2012





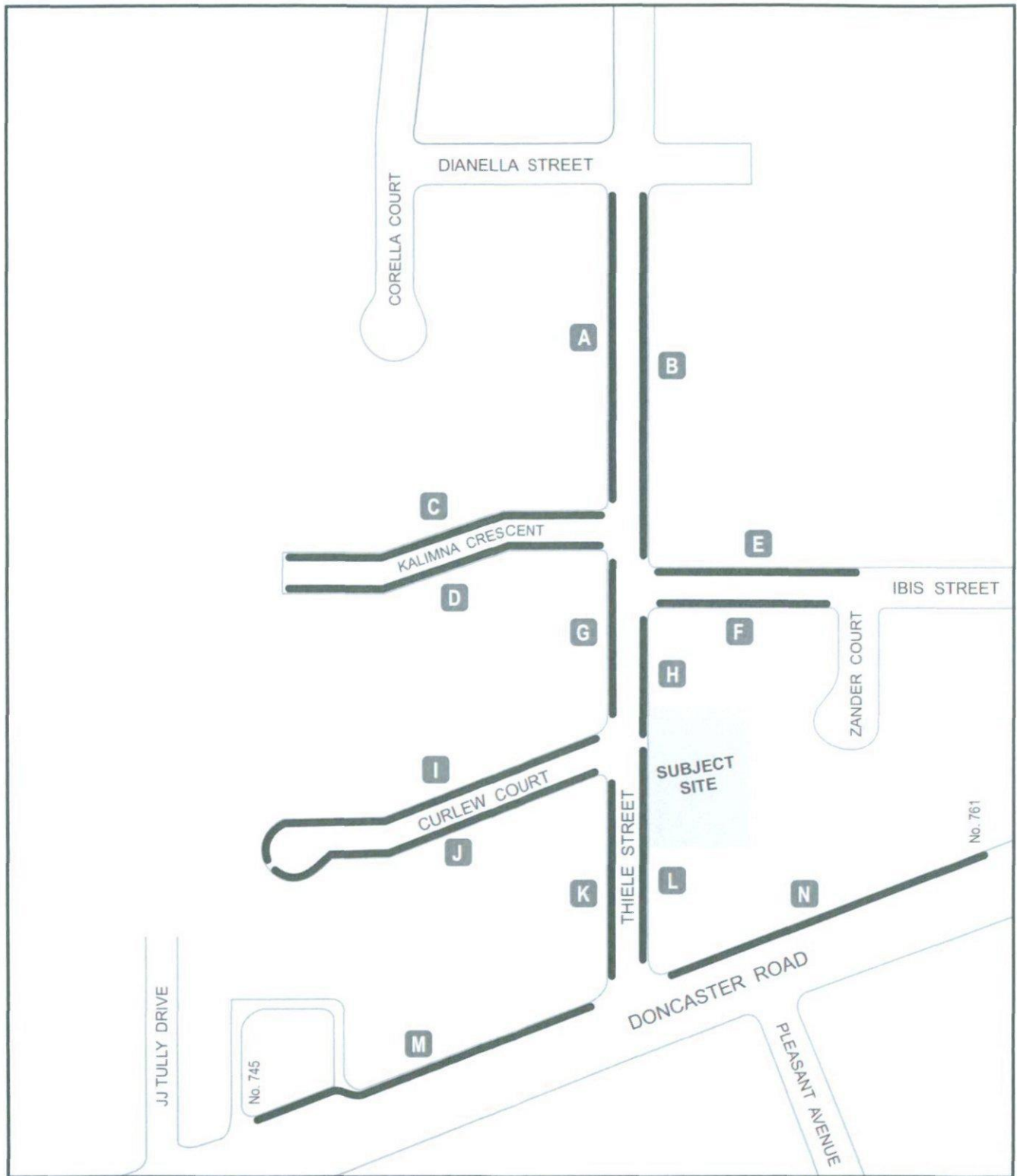


TABLE 2.1

PARKING OCCUPANCY SURVEY
 2-6 Thiele St and Surround Streets, Doncaster
 Wednesday, 22 February 2012

Weather Conditions: Fine

	Zone	Restriction	Parking At Times													Capacity
			7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	
Car Park Surveyed (Map Location)	A	Unrestricted	1	2	2	2	3	2	2	3	4	3	2	3	3	1
	B	Unrestricted	2	2	2	3	2	3	3	2	2	2	2	3	1	16
	C	Unrestricted	1	1	2	2	2	3	3	4	4	2	1	2	3	16
	D	Unrestricted	2	3	3	2	2	3	4	4	3	3	2	1	1	15
	E	Unrestricted	2	2	3	2	4	4	3	4	3	3	3	1	2	8
	F	No Standing (a)	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	G	Unrestricted	2	1	3	3	4	2	4	4	4	2	3	2	3	8
	H	Unrestricted	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	I	Unrestricted	2	2	3	2	3	2	2	2	3	1	2	2	1	16
	J	Unrestricted	2	1	2	3	4	4	2	3	4	1	1	2	2	13
	K	Unrestricted	3	3	3	3	2	2	2	3	4	4	3	2	2	4
	L	Unrestricted	3	4	4	4	6	5	6	5	4	5	4	4	5	7
	M	2P, P15min (c)	1	1	0	1	1	1	1	0	0	0	1	0	0	1
		2P	2	1	2	4	2	3	3	4	2	2	2	2	3	4
		Clear (b)	0	0	0	0	0	0	0	0	0	0	0	0	0	12
	N	Bus Zone	0	0	0	0	0	0	0	0	0	0	0	0	0	1
		Clear (b)	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Public Occupancy at time			23	23	29	31	35	34	35	38	37	28	26	24	26	
Public Capacity at time			127	127	150	150	150	150	150	150	150	127	127	150	150	
% Occupancy at Time			18%	18%	19%	21%	23%	23%	23%	25%	25%	22%	20%	16%	17%	

Restrictions:

- (a) 8am-4pm Schoolday, 8am-12pm Sun
 (b) 7am-9pm, 4pm-6pm Mon-Fri
 (c) 6pm-11pm

 Public parking not available at time