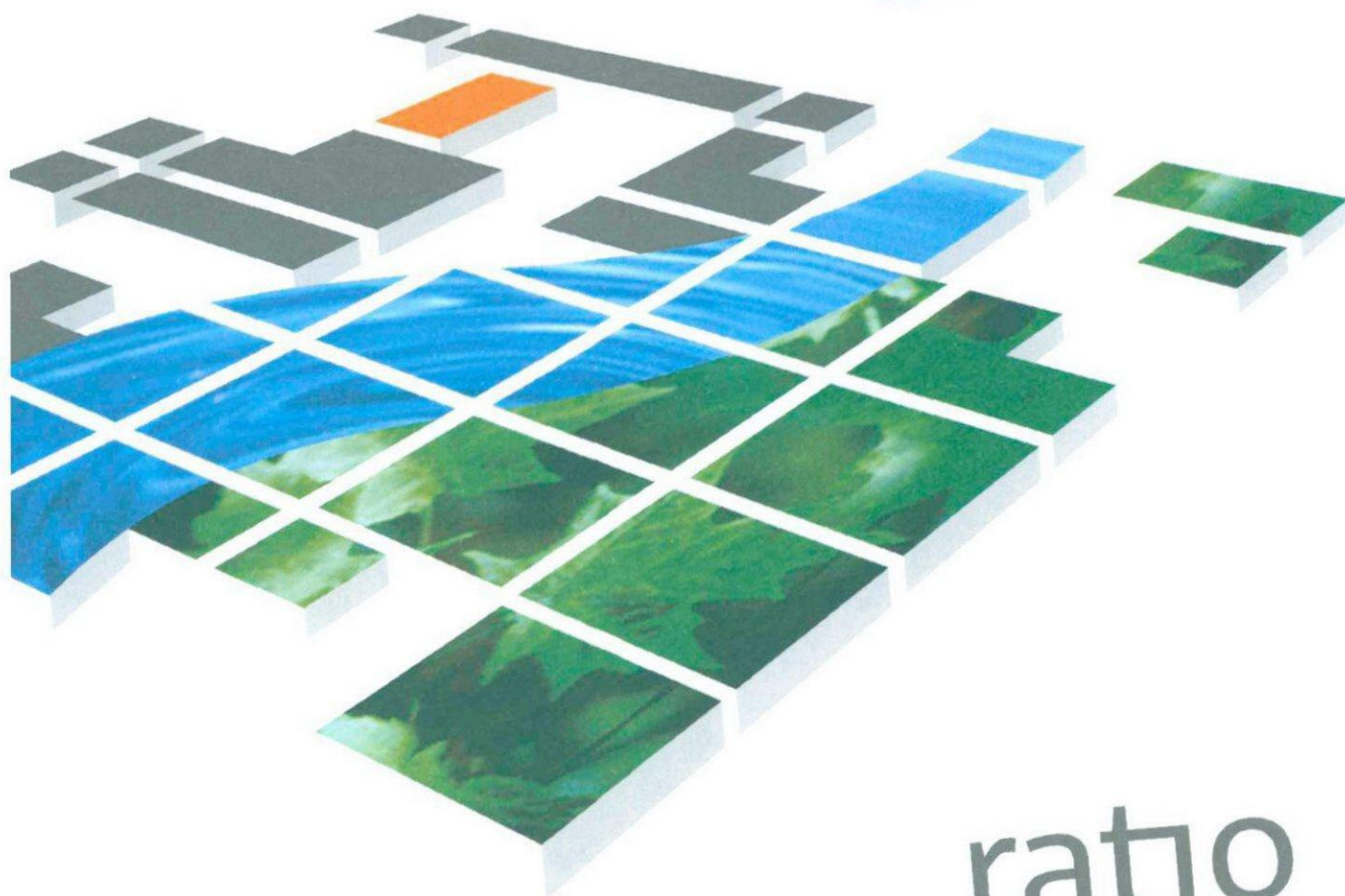


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Traffic Impact Report
Doncaster Residential Development
5-7 Curlew Court, Doncaster

March 2011

ADVERTISED PLANS

DATE: 13/5/2011

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1 INTRODUCTION

Ratio Consultants Pty Ltd was commissioned by Penbury Lodge Pty Ltd to assess the traffic and parking implications of the proposed residential development at 5-7 Curlew Court, Doncaster.

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

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



2 EXISTING CONDITIONS

2.1 LOCATION AND ENVIRONMENT

The subject site is located on the northern side of Curlew Court in Doncaster. The site is irregular in shape and comprises two separate property parcels being 5 Curlew Court and 7 Curlew Court, which are both currently occupied by existing brick dwellings. Overall the site has a frontage to Curlew Court of approximately 39.6 metres and a depth of approximately 42.2 metres, for an overall area of approximately 1,660 square metres.

Land uses in the vicinity of the site are predominantly residential in nature with the exception of the Manningham City Council Municipal Offices (positioned 200 metres to the west of the site) and the Westfield Shopping Centre further to the west. Doncaster Secondary College is located to the north east of the site and can be accessed off Ibis Street. The Doncaster Bowls Club is located to the west along J.J. Tully Drive.

Existing access to the site is via two separate crossovers to/from Curlew Court.

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

Curlew Court is classified as a local road that runs in an east-west direction to/from Thiele Street and ends in a cul-de-sac. It has a 6.8 metre wide carriageway which caters for one traffic lane in each direction and is subject to a 50 km/h speed limit. Kerbside parallel parking is permitted along both sides of Curlew Court. Constructed footpaths are provided on both sides of the road.

Doncaster Road is classified 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 19 metre wide divided carriageway with three lanes in each direction and a 1.5 metre wide grass median. On both sides of the road there is a kerbside lane which 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. Constructed footpaths are provided on both sides of the road.

Thiele Street is classified 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 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 to left in and left out movements only and is controlled by a Stop sign. Constructed footpaths are provided on both sides of the road.

2.3 TRAFFIC VOLUMES

Ratio Consultants Pty Ltd conducted comprehensive turning movement surveys 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

In addition, maximum vehicle queue lengths were recorded for vehicles turning left out of Thiele Street onto Doncaster Road. 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. On the basis of a 10% peak hour factor this would represent a daily traffic volume of about 1,570 vehicles per day, which is a typical volume for a local street with direct access to a primary arterial road and access to a secondary college.
- 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.

The queue analysis demonstrates that there was a maximum queue of 4 vehicles seeking to exit Thiele Street onto Doncaster Road during the AM peak period (8:55am to 9:00am). Queues were only recorded on Thiele Street between 8:40am and 9:10am, with an average queue length during this time of 2.3 vehicles. During the PM peak period, the maximum queue length was again 4 vehicles seeking to exit Thiele Street (3:25pm to 3:30pm). Again, queues were mostly recorded between 3:20pm and 3:30pm, with an average queue length during this time of 3.3 vehicles (recorded during the school peak pickup time).

The results of the survey demonstrate that there are no significant capacity constraints at the intersection.

Refer to Figure 2.1 of Appendix A for a summary of the AM and PM peak period survey results.

Ratio Consultants Pty Ltd conducted a further traffic movement survey at the following intersections on Wednesday 9 February 2011 between 8:00am and 9:00am to determine whether there have been any significant changes in peak traffic volumes:

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

The results of these surveys indicated that traffic volumes have reduced slightly at the intersection of Doncaster Road / Thiele Street with approximately 130 vehicles recorded during the morning peak hour. The dominant movement remains the left turn into Thiele Street with approximately 80-85 movements.

The Ibis Street / Thiele Street intersection also recorded lower traffic volumes with a total of 38 vehicles recorded turning out of Ibis Street onto Thiele Street, compared with 71 vehicles in earlier surveys. Refer to Figure 2.2 of Appendix A for a summary of the AM and PM peak period survey results.



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.

To determine the levels of parking demand during typical weekday and weekend conditions, Ratio Consultants Pty Ltd arranged for parking occupancy surveys to be conducted within a reasonable walking distance of the site (200 metres). The surveys were conducted on Friday 20th February 2009 between 7:00am and 7:00pm and Saturday 21st February 2009 from 10:00am to 4:00pm.

The survey area is shown in Figure 2.3 with the results of the parking survey presented in Tables 2.1 and 2.2 of Appendix A.

The survey results are presented below:

Friday 20 February 2009

There are a minimum of 63 on-street parking spaces within close proximity of the subject site. Of those spaces, 58 are solely unrestricted. A further 24 spaces are unrestricted outside of No Stopping times.

- 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 are 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 the frontage of the site along Thiele Street.



2.5 PUBLIC 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.

As part of the State Government's 'Victorian Transport Plan' there will be an increase in the frequency (10 minute frequencies) and duration (5:00am to 12:00 midnight weekdays, 6:00am to 12:00 midnight Saturdays and 7:00am to 9:00pm Sundays) for Bus Routes 301, 304, 307 and 308/319 from the Year 2011. This includes Bus Route 307 that runs along Doncaster Road.

2.6 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 2005 to 31 December 2009 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 two casualty crashes at the intersection of Doncaster Road and Thiele Street. Two of the four crashes were classified as 'serious injury' crashes, while the others were 'other injury' crashes. One of these occurred at the intersection of Doncaster Road and Thiele Street and involved two school aged pedestrians being hit at 3:30pm as a vehicle entered the intersection. 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 three storey residential building comprising a total of 30 dwellings and associated basement car parking.

The proposed development will incorporate the following components:

- 10 x one-bedroom dwellings;
- 20 x two-bedroom dwellings; and
- A basement level car park with a total of 35 spaces including 5 visitor spaces.

It is proposed to construct a new double width crossover into the site from Thiele Street at the south eastern 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 one additional kerbside parking space along Thiele Street.

Storage and waste storage areas will be provided in the basement car park. Bicycle parking for up to 10 bicycles will be provided in the basement car park also, in the north eastern corner.



4 PARKING ASSESSMENT

4.1 STATUTORY ASSESSMENT

The provisions set out under Clause 52.06 of the Manningham Planning Scheme sets out the number of car spaces required for residential dwellings in developments of four or more storeys. In accordance with the Car Parking Table to Clause 52.06-5, two car spaces are required per dwelling. Application of this rate produces a statutory requirement of 60 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.

As this development is less than four storeys, Clause 52.06 does not apply. The provisions set out in Clause 55.03-11 do apply as set out below.

Availability of Car Parking

As discussed, surveys conducted by Ratio Consultants Pty Ltd confirm that there is a reasonably low demand for parking in the area during typical weekday periods, with the exception of Ibis Street (due to the presence of the Doncaster Secondary College). The surveys indicate that there is spare capacity within the available on-street parking to accommodate any overflow parking associated with the proposed residential development.

Availability of Public Transport

The site has very good access to a range of bus services operating along Doncaster Road, approximately 100 metres south of the site, and this will further improve from the Year 2011 with upgraded bus route frequencies and durations as part of the implementation of the State Government's 'Victorian Transport Plan'.

4.2 CLAUSE 55.03 ASSESSMENT

The provisions set out under Clause 55.03-11 of the Manningham Planning Scheme (ResCode) apply to the proposed development as it is three storeys in height.

Clause 55.03-11 has the following parking rates:

- 1 resident space per one-bedroom and two-bedroom apartment;
- 2 resident spaces per three-bedroom or larger apartments; and
- 1 visitor space per 5 apartments.



Therefore the parking provision under Clause 55.03-11 of the Manningham Planning Scheme for the residential development is as follows:

- 30 one and two-bedroom apartments @ 1.0 resident spaces each **30 spaces**
- 30 apartments @ 1 visitor space per 5 apartments **6 spaces**
- TOTAL 36 spaces**

Based on the above rates the proposed residential development has a parking requirement of 36 spaces as assessed under the provisions of Clause 55.03-11 (ResCode). The proposed provision of 35 spaces therefore is one space short, however this can be provided on-street with the reinstatement of the kerb and channel when the existing crossovers are removed.

4.3 DONCASTER HILL PARKING PRECINCT PLAN

Whilst the subject site does not lie within any of the six defined Doncaster Hill Precincts (which are covered by Design and Development Overlay, Schedule 6 (DDO6) it sits just east of Precinct 1 (which borders the western side of J.J. Tully Drive). As discussed, the subject site is covered by DDO8 which, like DDO6, seeks, among other things, to increase residential densities.

The overall Doncaster Hill Precinct has a Parking Precinct Plan, which applies parking rates to a range of land uses. Dwellings have a parking requirement of 1.1 spaces for one and two bedroom dwellings and 2.1 spaces for three or more bedroom dwellings. The parking rate of 1.1 spaces per dwelling for one and two bedroom dwellings comprises 1.0 resident space (intentionally as per ResCode) with a visitor parking rate of 0.1 spaces per dwelling (lower than the ResCode rate of 0.2 spaces per dwelling).

Given that the site is covered by DDO8 and is located adjacent to Doncaster Hill the parking requirement rates of the Parking Precinct Plan are considered appropriate for the subject site. The proposed provision of 35 spaces would exceed the requirements of the Parking Precinct Plan rates of 33 spaces (30 resident spaces and 3 visitor spaces).

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

The vehicular ramp providing access to/from the basement car park from Curlew Court is in general accordance with AS/NZS 2890.1:2004 and incorporates a 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 gradient of 1:4 for 11.6 metres and a grade transition of 1:8 for the final 2.0 metres leading to/from the basement.

4.5 BICYCLE PARKING

The provisions set out under Clause 52.34-3 of the Manningham Planning Scheme, as presented below, establish the requirement for bicycle parking spaces. The Clause 52.34-3 rates for residential dwellings are:

- 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).

Accordingly, the proposed development has a parking requirement of **6 resident and 3 visitor bicycle spaces** (i.e. a total of 9 bicycle spaces).

The application plans show the provision of ten bicycle parking spaces within the basement car park in the north eastern corner. This level of provision is considered adequate. If desired a visitor bicycle parking area could be provided outside the basement car park to the west of the proposed crossover by installing two bicycle parking rails (capable of accommodating 4 bicycles).

4.6 REFUSE COLLECTION

A waste storage area is located within the basement car park adjacent to the lift core.

It is proposed that a private waste collection service will be used. It is considered appropriate that a condition be placed on a planning permit that a 'Waste Management Plan' be prepared for the development to the satisfaction of Council.



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 about 6 vehicle trips per day, so the 30 apartments could generate about 180 vehicle trips per day. Generally, about 10 percent of the trips, which equates to about 18 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	4
Departing trips	14
Total trips	18

PM PEAK

Arriving trips	13
Departing trips	5
Total trips	18

The two existing dwellings would be expected to generate in the order to 8 trips per dwelling per day for a total of about 16 daily trips or 1-2 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 16 vehicles per hour) will not create adverse traffic safety or capacity impacts on Curlew Court, Thiele Street, Ibis Street, Doncaster Road or the surrounding road network.



6 CONCLUSIONS

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

The provision of 35 on-site parking spaces within the basement is considered appropriate with one space allocated to each dwelling and 5 visitor spaces. Any overflow visitor parking is able to be accommodated in the surrounding spare publicly available on-street parking within the vicinity of the site.

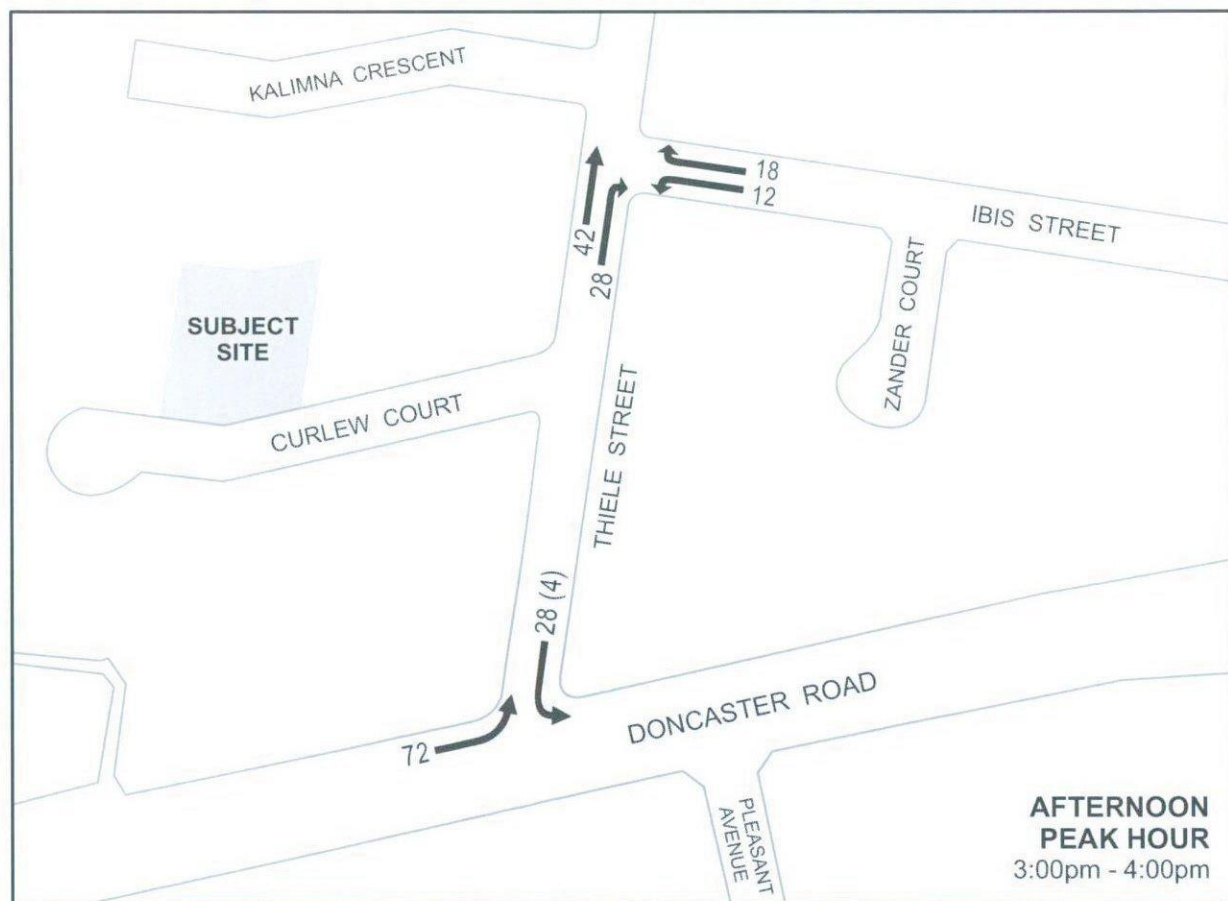
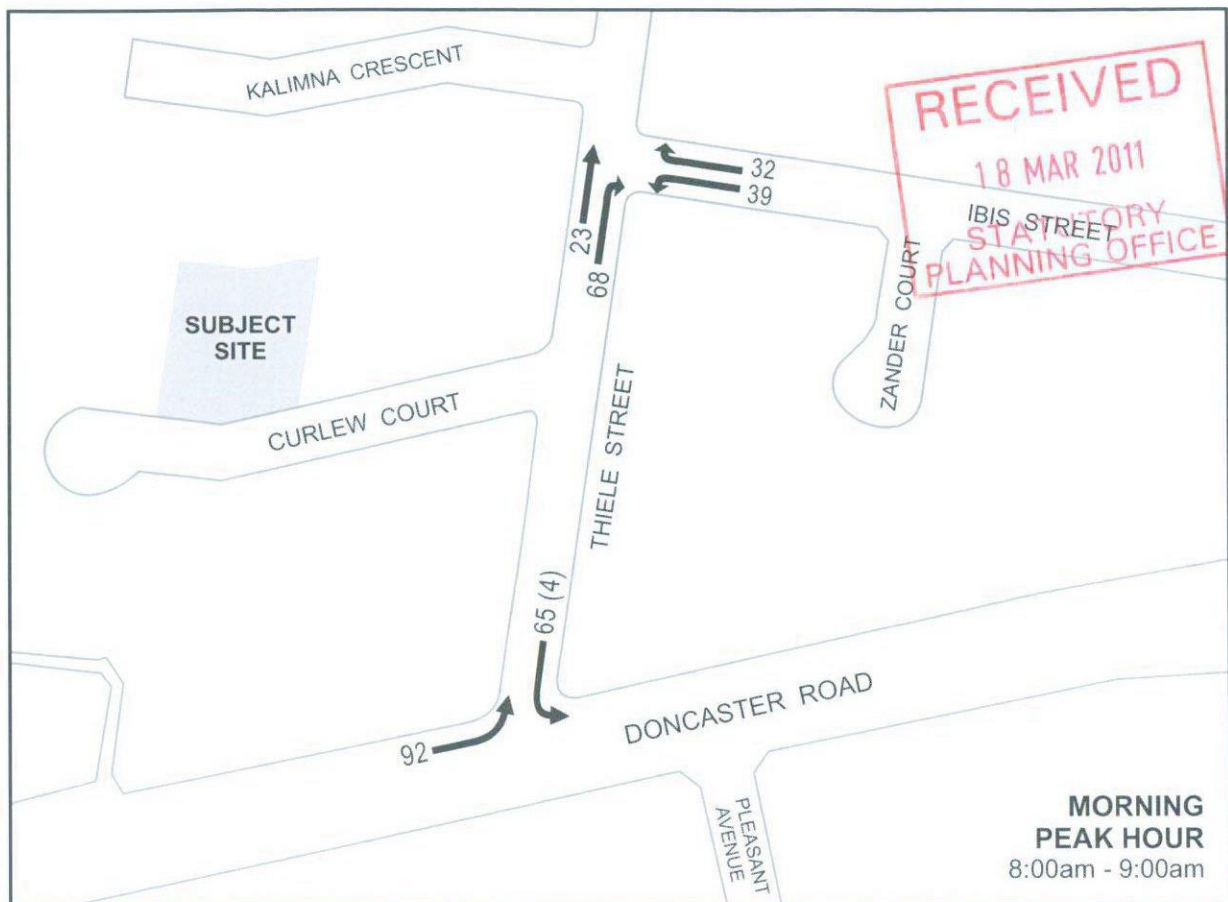
The proposed provision of 10 bicycle parking spaces is considered generous and exceeds the requirements of the Manningham Planning Scheme.

The proposal will generate around 18 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 Curlew Court, Thiele Street, Doncaster Road or the surrounding road network.

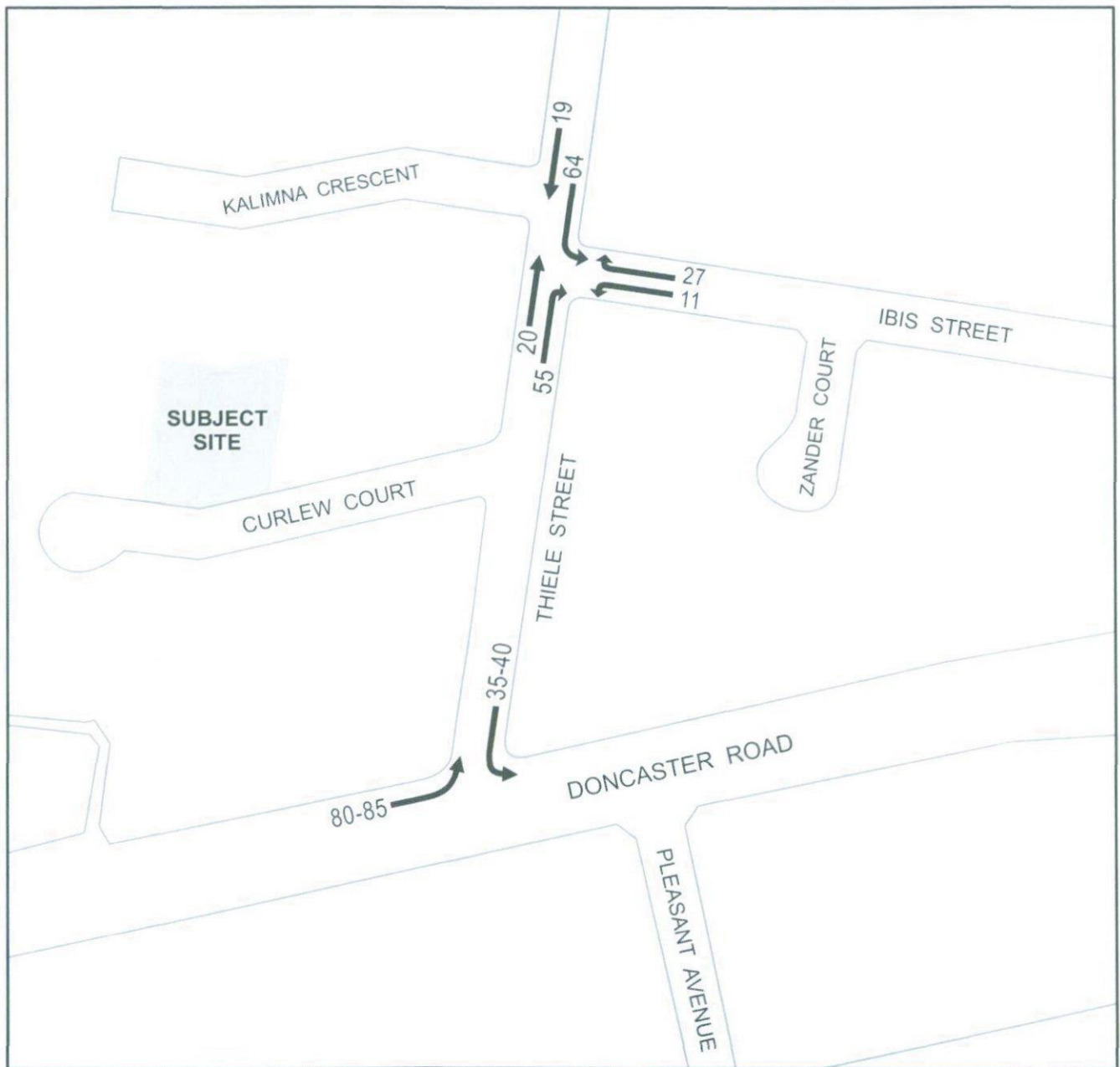
Overall the proposed development is not expected to create adverse traffic or parking impacts in the precinct.



Appendix A. Survey Results



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MORNING PEAK HOUR - 8:00am - 9:00am



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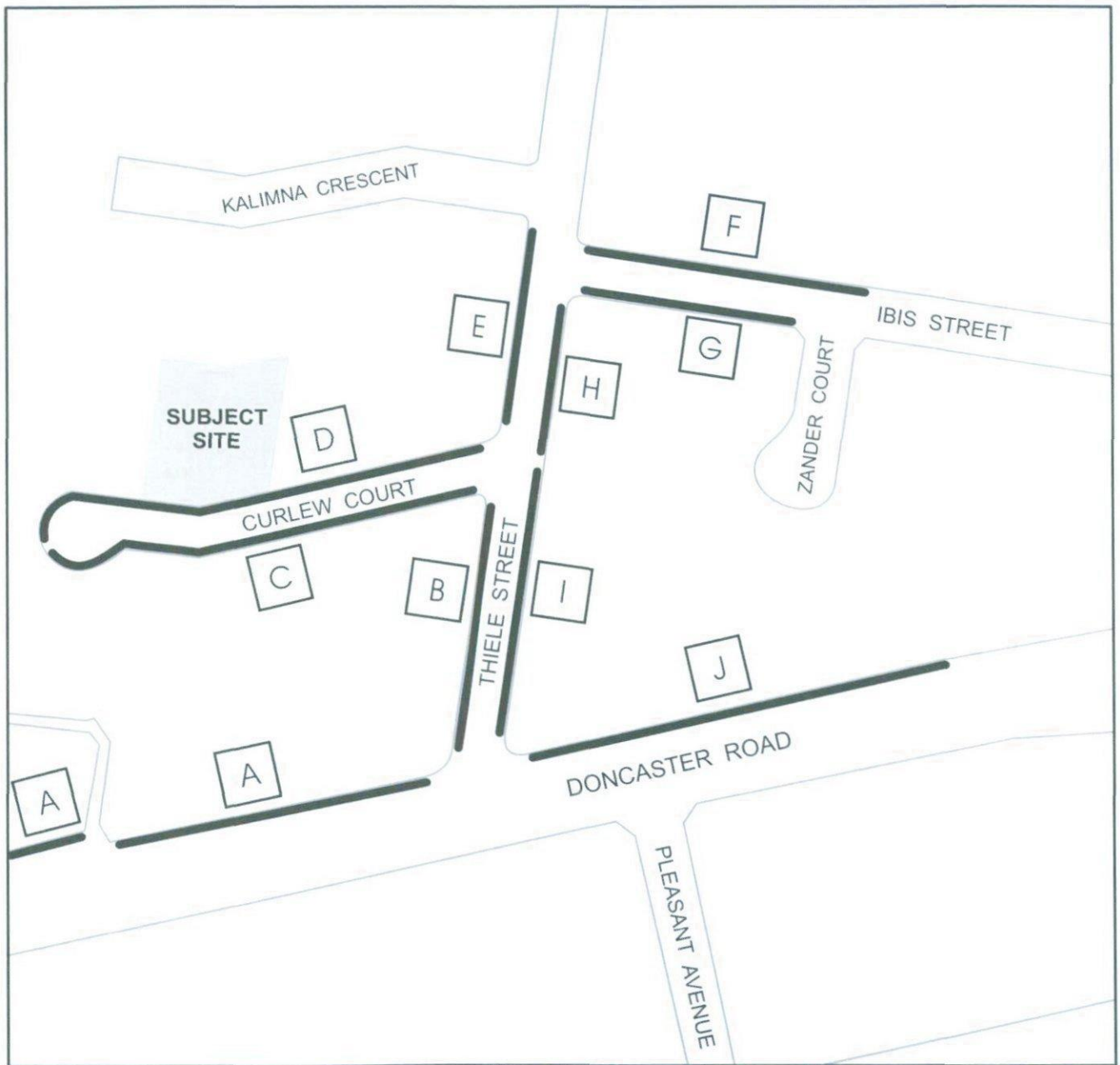


TABLE 2.1

PARKING OCCUPANCY SURVEY
Curlew Court and Surrounds, Doncaster
Friday 20 February 2009

Weather Conditions: Fine

		Restriction	Vehicles Parked at Time													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	2P Parallel	2	3	4	5	4	3	4	3	2	5	4	3	2	5
		No Standing (b)	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	B	None	2	1	1	0	0	1	1	1	0	0	0	1	2	7
	C	None	2	3	3	3	2	2	1	0	0	0	1	2	3	10
	D	None	1	1	1	2	2	2	1	1	1	1	1	1	2	14
	E	None	0	0	0	0	0	1	0	0	2	0	0	0	0	7
	F	None	2	4	8	8	8	8	8	8	8	1	0	0	0	8
	G	No Standing (a)	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	H	None	0	0	0	1	1	1	1	1	1	0	0	0	0	4
	I	None	1	1	1	1	1	1	0	0	1	0	0	1	1	8
	J	Bus Zone	0	0	0	0	0	0	0	0	0	0	0	0	0	2
		No Standing (b)	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Public Occupancy at time			10	13	18	20	18	19	16	14	15	7	6	8	10	87
Public Capacity at time			71	63	79	79	79	79	79	79	79	71	71	87	87	87
% Occupancy at Time			14%	21%	23%	25%	23%	24%	20%	18%	19%	10%	8%	9%	11%	100%

Restrictions:

Not included

- (a) 8AM-4PM School days; 8AM - 12:30PM Sunday
(b) 7AM-9AM, 4PM-6PM M-Fri

TABLE 2.2

PARKING OCCUPANCY SURVEY
Curlew Court and Surrounds, Doncaster
Saturday 21 February 2009

Weather Conditions: Fine

		Restriction	Vehicles Parked at Time							Capacity
			10:00	11:00	12:00	13:00	14:00	15:00	16:00	
Car Park Surveyed (Map Location)	A	2P Parallel	3	1	2	2	3	2	1	5
		No Standing (b)	0	0	0	0	0	0	0	8
	B	None	2	2	3	3	2	2	1	7
	C	None	2	1	1	1	1	2	2	10
	D	None	2	3	3	3	3	2	2	14
	E	None	0	1	0	0	0	1	0	7
	F	None	0	0	0	0	0	0	1	8
	G	No Standing (a)	0	0	0	0	0	0	0	8
	H	None	0	0	0	0	1	1	0	4
	I	None	0	0	0	0	0	1	1	8
	J	Bus Zone	0	0	0	0	0	0	0	2
		No Standing (b)	0	0	0	0	0	0	0	8
Public Occupancy at time			9	8	9	9	10	11	8	87
Public Capacity at time			87	87	87	87	87	87	87	87
% Occupancy at Time			10%	9%	10%	10%	11%	13%	9%	100%

Restrictions:



Not included

- (a) 8AM-4PM Scholl days; 8AM - 12:30PM Sunday
(b) 7AM-9AM, 4PM-6PM M-Fri