City of Canterbury
Town Centres Parking Strategy
Final Report

transportation planning, design and delivery

City of Canterbury

Town Centres Parking Strategy

Final Report

Issue: A 07/05/12

Client: City of Canterbury
Reference: JS10270
GTA Consultants Office: NSW

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By
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1. Introduction

1.1 Background and Study Aims

In 2009 the City of Canterbury initiated a new Development Control Plan (DCP) for the Canterbury LGA town centres and a review of the Section 94 Contributions Plan. It was identified through this process that there was a need to potentially provide additional car parking spaces within the town centres to meet future demands relating to proposed rezonings and increases in development density.

As a consequence of this, the City of Canterbury commissioned GTA Consultants to undertake a parking study of 12 town centres within the LGA.

The primary aim of the parking study is as follows:

- to provide the City of Canterbury with strategies to manage car parking both now and in the future
- to determine the future on and off street parking requirements (including number of parking spaces and potential locations)
- to develop revised parking rates and standards that could be incorporated within Councils DCP and Section 94 contributions plan.

The provision of car parking in a town centre is an important factor when determining the economic viability of existing and future development. It is not only the quantum of car parking provided but also how effectively it is managed (time-restricted, paid, unpaid, etc) and enforced that ensures that a town centre can maximise the economic benefits of providing adequate parking.

Consideration also needs to be given to the varying needs of different users within each town centre, from employees or commuters who need to park all day to retail customers requiring short-term, high-turnover parking. It is important to determine the specific parking demands and uses within each town centre in order to establish strategies that will effectively manage parking into the future.

One of the key outcomes of this study is an appropriate set of parking rates which reflect the specific usage characteristics of the town centres which have been determined using a parking model approach, where the actual existing parking usage is related directly back to the size and type of the town centre land uses. The parking model can also be used to determine the future parking requirements of each of the town centres.

1.2 Study Stages

The study was conducted in four stages as follows:

i Collation of all existing information and collection of parking usage data for each of the town centres as well as preliminary consultation with relevant stakeholders.

ii Preparation of existing and future car parking models, identification of future car parking requirements and follow up consultation with relevant stakeholders.

iii Determination of parking strategies to manage existing car parking demands and operational issues for future car parking demands.

iv Review of existing car parking rates in Development Control Plan No. 20 – Car Parking, adopted in 2009.

1.3 Purpose of this Report

This report sets out the findings from Stages 1 to 4 of the study. Stage 1 focussed on the collation of all existing information and collection of parking usage data for each of the town centres as well as preliminary consultation with relevant stakeholders. The following specific tasks were undertaken as part of Stage 1:

i Parking inventory surveys, including on-street kerbside parking, Council-controlled off-street car parking and any other publicly-available off-street parking.
ii Parking demand surveys on a weekday and Saturday in each of the centres.
iii Sample duration of stay surveys in Lakemba, Campsie and Belmore.
iv Analysis of all survey data, including graphical representation of all findings.
v Mapping outputs showing the parking inventories and restrictions and parking demand during the peak hour of a typical weekday and Saturday.
vi Land use surveys, including land use type and floor space area.

Stage 2 focussed on the preparation of existing and future car parking models, identification of future car parking requirements and follow up consultation with relevant stakeholders. The following tasks were undertaken as part of Stage 2:

vii Preparation of existing parking models utilising standard car parking rates and temporal profiles.
viii Calibration of existing parking models to match the observed demand in each centre.
ix Preparation of future parking models based on future additional floor areas.
x Determination of future car parking requirements for specific centres, provided by Canterbury Council.
xi Determination of the potential locations for future car parking.

Stage 3 consisted of the development of parking strategies to manage existing and future car parking demand and to address current operational issues. Stage 4 included a parking review of the existing DCP car parking rates to determine whether the parking rates for any of the dominant land uses should be amended.

1.4 References

In preparing this report, reference was made to the following:

i an inspection of each town centre and its surrounds
ii car parking surveys as referenced in the context of this report
iii City of Canterbury Development Control Plan (DCP) No.20 – Car Parking, 2008
iv City of Canterbury Section 94 Contributions Plan, 2005
v other documents and data as referenced in this report.

2. Existing Conditions

2.1 Study Area

The study area consists of the 12 town centres with the extents of each town centre defined primarily by retail and commercial land uses. The exact extents of the study area were determined through desktop analysis of land use types and confirmed on site and sought to include all areas currently being used for parking by visitors to the town centres and those directly associated with the town centre uses. The town centre study area boundaries are shown in Figure 2.1.

2.2 Car Parking Supply

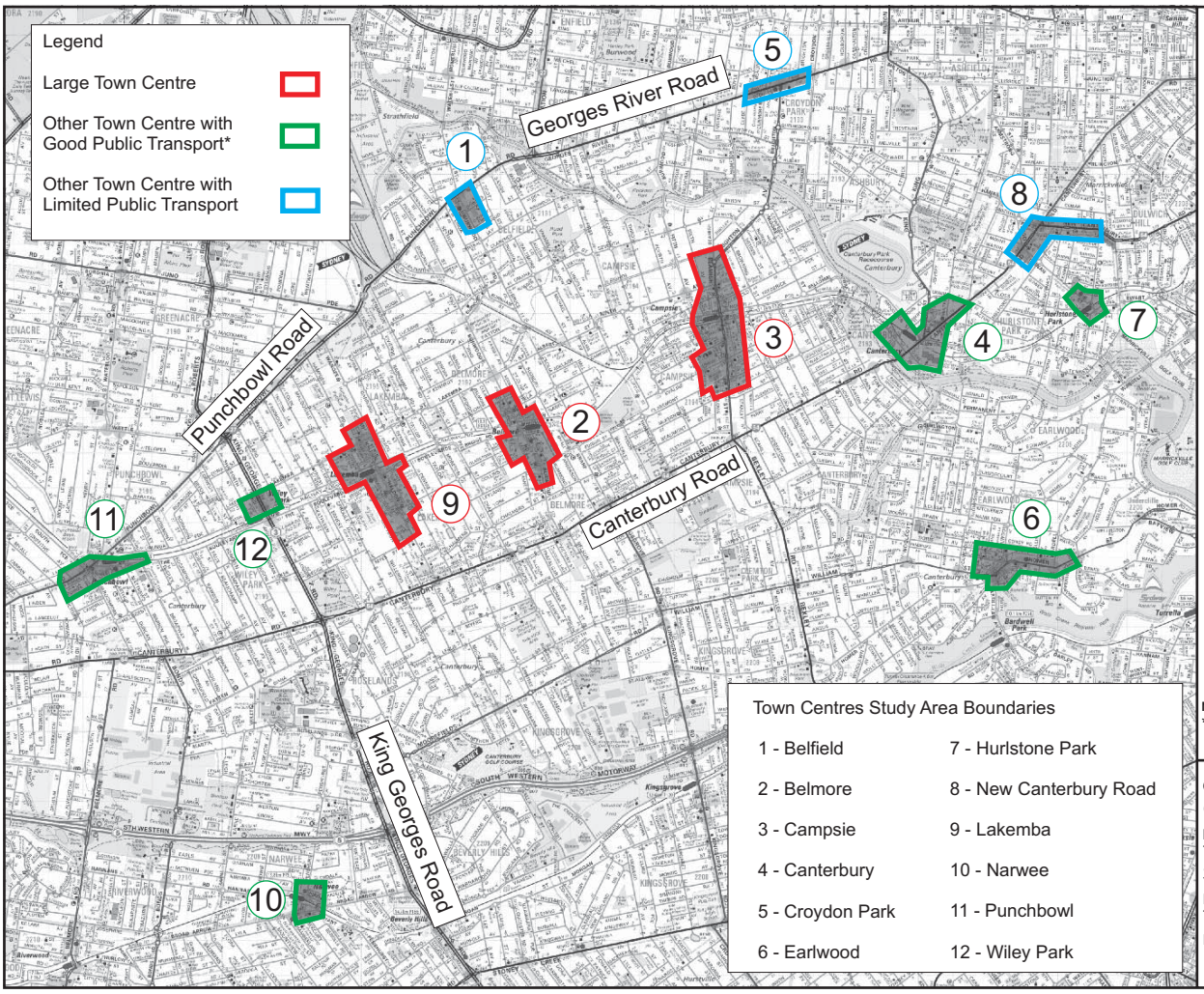
An inventory of publicly available car parking has been prepared by GTA Consultants and Austraffic, which was collated predominantly through on-site inspections. Council also provided an inventory of the Council-owned off-street car park areas and these numbers were confirmed on-site. It is noted that in most cases, private off-street parking was not included in the inventory.

The supply of car parking by town centre is summarised in Table 2.1 and Table 2.2, with the full inventory illustrated and documented in Appendix A.

Table 2.1: Car Parking Supply (2010)

Town Centre	Short-Term [1]		Long-Term [2]		Total (spaces)
	On-Street (spaces)	Off-Street (spaces)	On-Street (spaces)	Off-Street (spaces)	
Belfield	36	35	30	60	161
Belmore	134	64	298	230	726
Campsie	387	179	353	932	1,851
Canterbury	27	26	319	104	576
Croydon Park	60	16	64	58	198
Earlwood	81	104	146	245	576
Hurlstone Park	36	16	102	12	166
Lakemba	241	157	359	357	1,114
Narwee	72	0	16	73	161
New Canterbury Road	22	9	231	345	607
Punchbowl	100	73	53	131	357
Wiley Park	16	0	64	39	119
Totals	1212	679	2035	2586	6,612

Notes: [1] Short-term parking refers to locations where timed restrictions are provided for durations less than 4 hours.
[2] Long-term parking refers to locations where timed restrictions are provided for durations of 4 hours or more, including areas which are unrestricted.



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Note:
* With a railway station or a strategic bus corridor through the town centre

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Figure
Figure 2.1

Table 2.2: Car Parking Supply (2010) by Restriction

Town Centre		5minP	10minP	15minP	1/2P	1P	2P	3P	4P	Disabled	Unrestricted	Unrestricted (time-restricted) [1]	Total
Belfield	On-street	0	0	0	16	20	0	0	0	0	22	8	66
	Off-street	0	0	0	0	0	0	35	0	1	59	0	95
	Total	**0**	**0**	**0**	**16**	**20**	**0**	**35**	**0**	**1**	**81**	**8**	**161**
Belmore	On-street	0	4	0	53	77	0	0	0	5	291	2	432
	Off-street	0	0	0	0	0	64	0	0	18	212	0	294
	Total	**0**	**4**	**0**	**53**	**77**	**64**	**0**	**0**	**23**	**503**	**2**	**726**
Campsie	On-street	1	0	0	128	136	122	0	0	9	299	45	740
	Off-street	0	0	0	0	0	179	0	0	12	920	0	1,111
	Total	**1**	**0**	**0**	**128**	**136**	**301**	**0**	**0**	**21**	**1,219**	**45**	**1,851**
Canterbury	On-street	0	0	0	16	4	7	0	0	2	288	29	346
	Off-street	0	0	0	0	0	26	0	0	3	101	0	130
	Total	**0**	**0**	**0**	**16**	**4**	**33**	**0**	**0**	**5**	**389**	**29**	**576**
Croydon Park	On-street	0	0	0	0	47	13	0	0	7	49	8	124
	Off-street	0	0	0	0	0	16	0	0	0	58	0	74
	Total	**0**	**0**	**0**	**0**	**47**	**29**	**0**	**0**	**7**	**107**	**8**	**198**
Earlwood	On-street	0	0	8	8	52	13	0	0	7	69	70	227
	Off-street	0	0	0	0	0	34	70	0	11	234	0	349
	Total	**0**	**0**	**8**	**8**	**52**	**47**	**70**	**0**	**18**	**303**	**70**	**576**
Hurlstone Park	On-street	0	0	0	4	32	0	0	0	1	101	0	138
	Off-street	0	0	0	0	16	0	0	8	0	4	0	28
	Total	**0**	**0**	**0**	**4**	**48**	**0**	**0**	**8**	**1**	**105**	**0**	**166**

Town Centre		5minP	10minP	15minP	1/2P	1P	2P	3P	4P	Disabled	Unrestricted	Unrestricted (time-restricted) [1]	Total
Lakemba	On-street	1	0	0	146	95	0	0	0	12	341	6	601
	Off-street	0	0	0	0	13	143	0	155	15	187	0	513
	Total	**1**	**0**	**0**	**146**	**108**	**143**	**0**	**155**	**27**	**528**	**6**	**1,114**
Narwee	On-street	0	0	0	0	52	20	0	0	3	13	0	88
	Off-street	0	0	0	0	0	0	0	0	0	73	0	73
	Total	**0**	**0**	**0**	**0**	**52**	**20**	**0**	**0**	**3**	**86**	**0**	**161**
New Canterbury Road	On-street	0	2	0	8	12	0	0	0	0	149	82	253
	Off-street	0	0	0	0	0	0	0	0	0	354	0	354
	Total	**0**	**2**	**0**	**8**	**12**	**0**	**0**	**0**	**0**	**503**	**82**	**607**
Punchbowl	On-street	0	0	0	21	58	21	0	0	0	53	0	153
	Off-street	0	0	0	0	0	39	34	0	8	123	0	204
	Total	**0**	**0**	**0**	**21**	**58**	**60**	**34**	**0**	**8**	**176**	**0**	**357**
Wiley Park	On-street	0	0	0	16	0	0	0	0	0	38	26	80
	Off-street	0	0	0	0	0	0	0	0	0	39	0	39
	Total	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**77**	**26**	**119**

[1] Relates to parking spaces where unrestricted parking is permitted outside of "No Stopping" or "Clearway" restrictions.

2.3 Car Parking Demand

Parking demand surveys were undertaken by GTA Consultants and Austraffic in all of the study areas, which involved collection of parking occupancy data on an hourly basis. The surveys were undertaken on the following days.

Table 2.3: Summary of Parking Demand Survey Periods

Town Centre	Tuesday 23 November	Wednesday 24 November	Thursday 25 November	Friday 26 November [1]	Saturday 27 November
Belfield	8:00am to 5:00pm	-	-	-	9:00am to 4:00pm
Belmore	-	8:00am to 5:00pm	-	-	9:00am to 3:00pm
Campsie	-	-	7:00am to 6:00pm	-	7:00am to 6:00pm
Canterbury	-	-	8:00am to 5:00pm	-	9:00am to 3:00pm
Croydon Park	8:00am to 5:00pm	-	-	-	9:00am to 4:00pm
Earlwood	-	8:00am to 5:00pm	-	-	9:00am to 3:00pm
Hurlstone Park	8:00am to 5:00pm	-	-	-	9:00am to 4:00pm
New Canterbury Road	8:00am to 5:00pm	-	-	-	9:00am to 4:00pm
Lakemba	-	8:00am to 5:00pm	-	8:00am to 5:00pm	9:00am to 3:00pm
Narwee	8:00am to 5:00pm	-	-	-	9:00am to 4:00pm
Punchbowl	8:00am to 5:00pm	-	-	8:00am to 6:00pm	9:00am to 4:00pm
Wiley Park	8:00am to 5:00pm	-	-	-	9:00am to 4:00pm

[1] The Friday survey was undertaken to capture parking demand data to coincide with religious services at Punchbowl Musalla (Prayer Hall) and Lakemba Mosque.

The survey results are summarised in Table 2.4 to Table 2.15 and Figure 2.2 to Figure 2.25, with the full results provided in Appendix A. All survey days are considered 'typical' and are appropriate for the purposes of the analysis undertaken.

Some of the key findings from the survey analysis are as follows:

i Weekday peak parking demand were:

- High (>80% occupancy) in Campsie, Hurlstone Park, Lakemba and Punchbowl
- Moderate (50-80% occupancy) in Belmore, Canterbury, Croydon Park, Earlwood, Narwee and Wiley Park
- Low (<50% occupancy) in Belfield and New Canterbury Road.

ii Saturday peak parking demand were:

- High (>80% occupancy) in Belmore and Campsie
- Moderate (50-80% occupancy) in Belfield, Croydon Park, Earlwood, Hurlstone Park, Lakemba, Narwee, Punchbowl and Wiley Park
- Low (<50% occupancy) in Canterbury and New Canterbury Road.

iii For the busiest surveyed day, short-term parking demand was:

- High (>80% occupancy) in Belfield, Belmore (Precinct 1 and 2), Campsie (Precinct 1 and 2), Narwee, Lakemba, Punchbowl
- Moderate (50-80% occupancy) in Canterbury, Croydon Park, Earlwood, Hurlstone Park, New Canterbury Road and Wiley Park
- Low (<50% occupancy) in no centres.

iv For the busiest surveyed day, long-term parking demand was:

- High (>80% occupancy) in Belmore (Precinct 2), Campsie (Precinct 2), Croydon Park, Earlwood, Hurlstone Park
- Moderate (50-80% occupancy) in Belfield, Belmore (Precinct 1), Campsie (Precinct 1), Lakemba, Narwee, Punchbowl, Wiley Park
- Low (<50% occupancy) in Canterbury, New Canterbury Road.

v The time of day where peak parking occupancy occurred on a weekday varied across the centres as follows:

- Smaller centres, including Croydon Park, Belfield, Wiley Park and New Canterbury Road, experienced peak occupancy late in the afternoon at around 5:00pm. This could reflect the use of these centres as local shopping destinations for trips on the way home from work and school.
- Large centres, including Campsie, Belmore, Earlwood, Lakemba and Punchbowl, experienced peak occupancy between 11:00am and 1:00pm. This could reflect the nature of these centres as larger shopping and business destinations, servicing a wider catchment and attracting people during the lunchtime period.

vi The time of day where peak parking occupancy occurred on a Saturday also varied across the centres, with details as follows:

- The majority of centres experienced peak occupancy between 10:00am and 2:00pm, which coincided with lunchtime and late morning shopping trips.
- The exception was Campsie, where the peak occupancy was at 4:00pm. Campsie is a large shopping and business district and the late peak occupancy could reflect the use of the centre by more people over a longer period of time. However, it is noted that Campsie also experienced a high occupancy at 11:00am, which is consistent with the late morning shopping peaks of the other centres.

vii On-street short-term parking is essentially at capacity at 85% occupancy, where beyond this occupancy vacant spaces are difficult to locate. Parking demand for short-term time-restricted spaces was greater than or equal to 85% for the following centres:

- Belfield (Saturday)
- Belmore (Saturday)
- Campsie (weekday and Saturday)
- Canterbury (weekday and Saturday)
- Lakemba (weekday)
- Punchbowl (weekday and Saturday).

viii Occupancy of long-term parking spaces was higher than the occupancy of short-term parking spaces in Hurlstone Park and Wiley Park. It is noted that these are relatively small centres which contain a railway station and have no dedicated commuter car parks, therefore it is likely that the long-term spaces are occupied by rail commuters.

ix In Punchbowl, parking demand exceeded parking supply at 1:00pm during the Friday survey. This included parking demand in areas where parking was not permitted, including in No Parking or No Stopping zones, mail zones and bus zones. It is noted that this peak coincided with peak Friday prayer time activity at the Punchbowl Musalla (prayer hall) in Matthews Street.

x The parking supply has been adjusted to exclude any parking that is lost during clearway times or other periods of no parking, such as adjacent to schools during pick-up and drop-off times. This is why the supply is shown to vary across the day as well as being different between a weekday and a Saturday.

A summary of the parking results for each town centre are provided on the following pages. For the peak day the total parking demand has been broken down into long-term and short-term demands.

Table 2.4: Belfield Overall Parking Demand Survey Results

Belfield		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	153	153	161	161	161	161	161	159	159	159
	Demand	52	61	65	73	71	75	68	76	72	68
	Occupancy	*34%*	*40%*	*40%*	*45%*	*44%*	*47%*	*42%*	*48%*	*45%*	*43%*
Saturday 27 November	Supply	n/a	161	161	161	161	161	161	161	n/a	n/a
	Demand	n/a	59	83	91	120	108	97	95	n/a	n/a
	Occupancy	*n/a*	*37%*	*52%*	*57%*	*75%*	*67%*	*60%*	*59%*	*n/a*	*n/a*

Figure 2.2: Belfield Overall Parking Demand

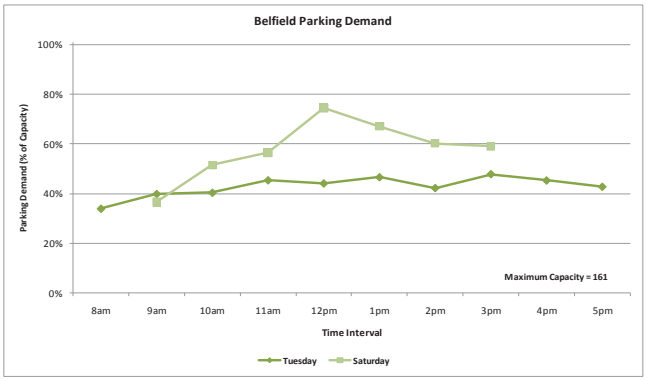


Figure 2.3: Belfield "Peak Day" Long-Term and Short-Term Parking Demand

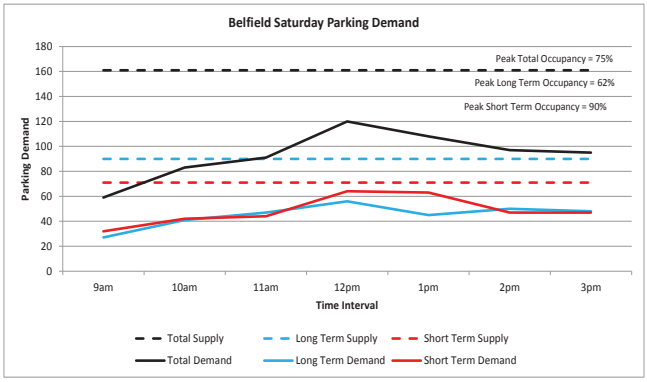


Table 2.5: Belmore Overall Parking Demand Survey Results

Belmore		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Wednesday 24 November	Supply	708	706	706	706	706	706	706	706	706	706
	Demand	366	430	485	491	540	519	475	469	478	457
	Occupancy	*52%*	*61%*	*69%*	*70%*	*76%*	*74%*	*67%*	*66%*	*68%*	*65%*
Saturday 27 November	Supply	n/a	706	706	706	706	708	708	708	n/a	n/a
	Demand	n/a	401	392	422	390	533	585	506	n/a	n/a
	Occupancy	*n/a*	*57%*	*56%*	*60%*	*55%*	*75%*	*83%*	*71%*	*n/a*	*n/a*

Figure 2.4: Belmore Overall Parking Demand

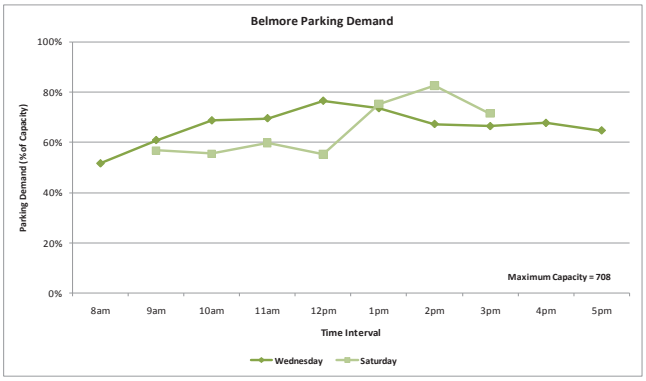


Figure 2.5: Belmore "Peak Day" Long-Term and Short-Term Parking Demand

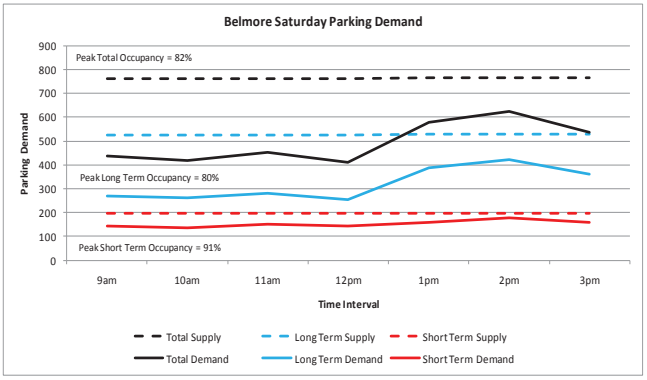


Table 2.6: Campsie Overall Parking Demand Survey Results

Campsie		7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm
Thursday 25 November	Supply	1,857	1,857	1,809	1,820	1,820	1,820	1,820	1,820	1,809	1,805	1,805	1,842
	Demand	369	705	1,059	1,416	1,513	1,493	1,412	1,344	1,374	1,388	1,324	1,116
	Occupancy	*20%*	*38%*	*59%*	*78%*	*83%*	*82%*	*78%*	*74%*	*76%*	*77%*	*73%*	*61%*
Saturday 27 November	Supply	1,857	1,857	1,822	1,822	1,822	1,822	1,857	1,857	1,857	1,857	1,857	1,857
	Demand	761	918	951	1,236	1,421	1,367	1,357	1,364	1,377	1,498	1,482	1,238
	Occupancy	*41%*	*49%*	*52%*	*68%*	*78%*	*75%*	*73%*	*73%*	*74%*	*81%*	*80%*	*67%*

Figure 2.6: Campsie Overall Parking Demand

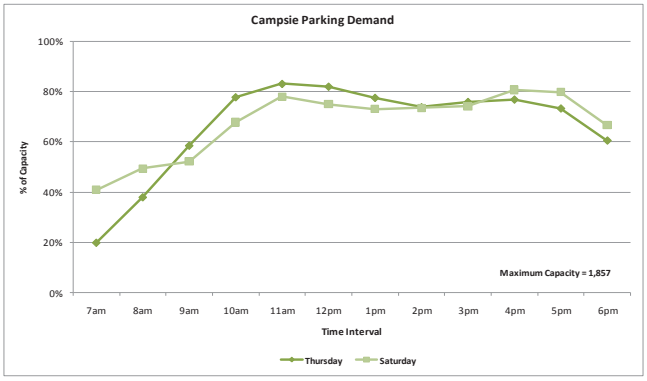


Figure 2.7: Campsie "Peak Day" Long-Term and Short-Term Parking Demand

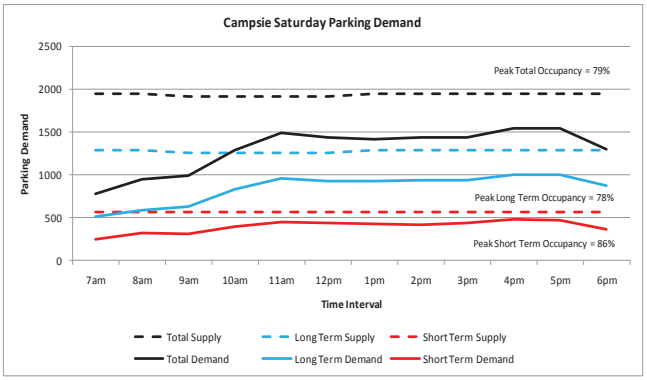


Table 2.7: Canterbury Overall Parking Demand Survey Results

Canterbury		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Thursday 25 November	Supply	427	427	476	476	476	476	476	427	427	427
	Demand	165	278	268	272	245	254	243	209	215	182
	Occupancy	*39%*	*65%*	*56%*	*57%*	*51%*	*53%*	*51%*	*49%*	*50%*	*43%*
Saturday 27 November	Supply	n/a	476	476	476	476	476	476	476	n/a	n/a
	Demand	n/a	199	224	212	233	217	224	196	n/a	n/a
	Occupancy	*n/a*	*42%*	*47%*	*45%*	*49%*	*46%*	*47%*	*41%*	*n/a*	*n/a*

Figure 2.8: Canterbury Overall Parking Demand

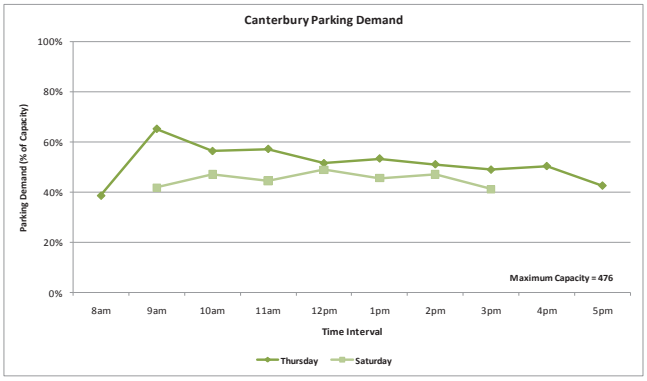


Figure 2.9: Canterbury "Peak Day" Long-Term and Short-Term Parking Demand

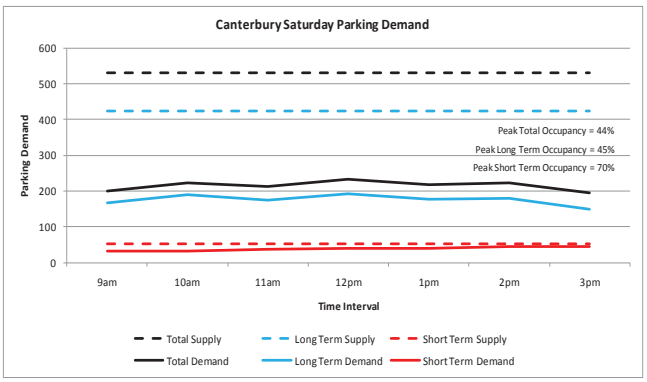


Table 2.8: Croydon Park Overall Parking Demand Survey Results

Croydon Park		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	165	165	182	182	182	182	182	179	179	179
	Demand	76	94	104	100	102	110	113	115	109	117
	Occupancy	*46%*	*57%*	*57%*	*55%*	*56%*	*60%*	*62%*	*64%*	*61%*	*65%*
Saturday 27 November	Supply	n/a	182	182	182	182	182	182	182	n/a	n/a
	Demand	n/a	105	117	112	134	137	140	133	n/a	n/a
	Occupancy	*n/a*	*58%*	*64%*	*62%*	*74%*	*75%*	*77%*	*73%*	*n/a*	*n/a*

Figure 2.10: Croydon Park Overall Parking Demand

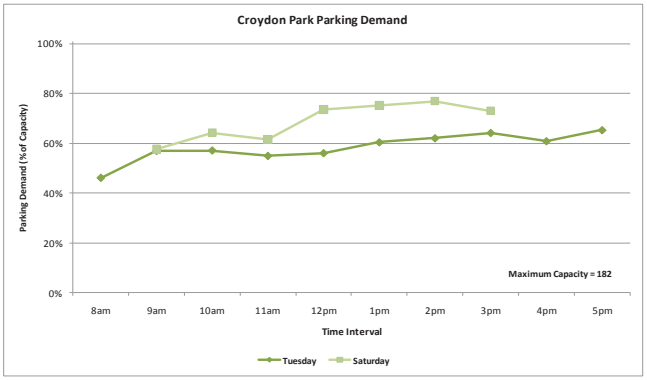


Figure 2.11: Croydon Park "Peak Day" Long-Term and Short-Term Parking Demand

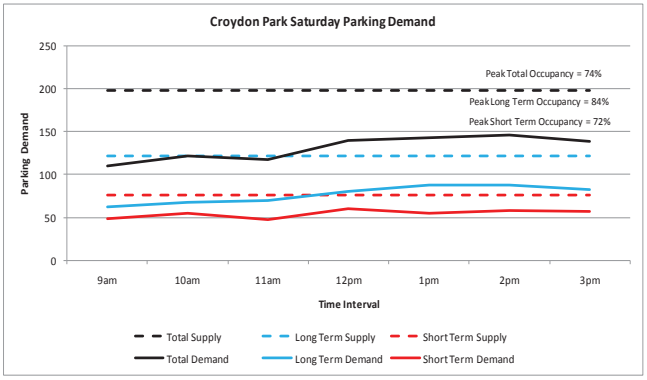


Table 2.9: Earlwood Overall Parking Demand Survey Results

Earlwood		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Wednesday 24 November	Supply	545	485	516	516	516	516	516	516	486	486
	Demand	182	317	353	361	318	313	311	343	307	293
	Occupancy	*33%*	*65%*	*68%*	*70%*	*62%*	*61%*	*60%*	*66%*	*63%*	*60%*
Saturday 27 November	Supply	n/a	516	516	516	516	576	576	576	n/a	n/a
	Demand	n/a	277	404	383	364	326	289	323	n/a	n/a
	Occupancy	*n/a*	*54%*	*78%*	*74%*	*71%*	*57%*	*50%*	*56%*	*n/a*	*n/a*

Figure 2.12: Earlwood Overall Parking Demand

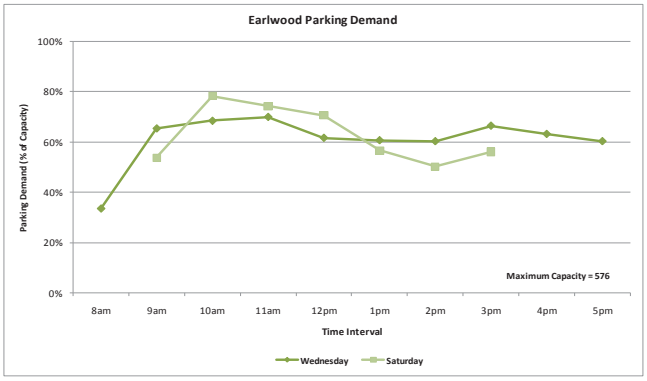


Figure 2.13: Earlwood "Peak Day" Long-Term and Short-Term Parking Demand

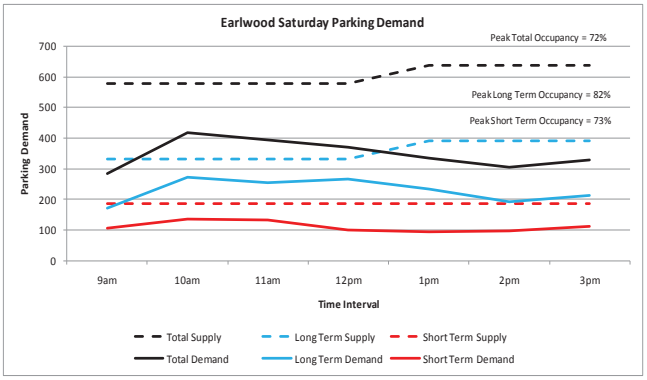


Table 2.10: Hurlstone Park Overall Parking Demand Survey Results

Hurlstone Park		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	166	166	166	166	166	166	166	166	166	166
	Demand	100	124	131	144	132	120	123	115	119	121
	Occupancy	*60%*	*75%*	*79%*	*87%*	*80%*	*72%*	*74%*	*69%*	*72%*	*73%*
Saturday 27 November	Supply	n/a	166	166	166	166	166	166	166	n/a	n/a
	Demand	n/a	100	116	118	124	113	102	90	n/a	n/a
	Occupancy	*n/a*	*60%*	*70%*	*71%*	*75%*	*68%*	*61%*	*54%*	*n/a*	*n/a*

Figure 2.14: Hurlstone Park Overall Parking Demand

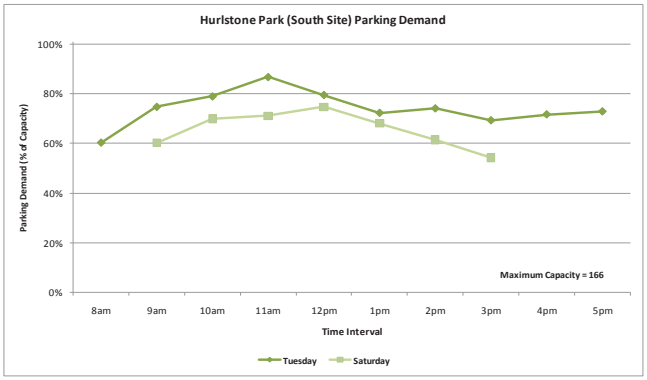


Figure 2.15: Hurlstone Park "Peak Day" Long-Term and Short-Term Parking Demand

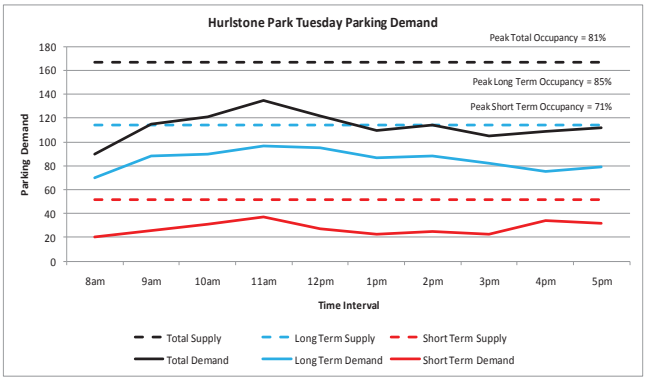


Table 2.11: Lakemba Overall Parking Demand Survey Results

Lakemba		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Wednesday 24 November	Supply	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,108	1,108
	Demand	515	721	850	930	951	897	863	830	749	679
	Occupancy	*46%*	*65%*	*76%*	*83%*	*85%*	*81%*	*77%*	*75%*	*68%*	*61%*
Friday 26 November	Supply	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,114	1,108	1,108
	Demand	500	722	823	896	915	975	923	890	860	781
	Occupancy	*45%*	*65%*	*74%*	*80%*	*82%*	*88%*	*83%*	*80%*	*78%*	*70%*
Saturday 27 November	Supply	n/a	1,114	1,114	1,114	1,114	1,114	1,114	1,114	n/a	n/a
	Demand	n/a	541	754	782	805	783	679	721	n/a	n/a
	Occupancy	*n/a*	*49%*	*68%*	*70%*	*72%*	*70%*	*61%*	*65%*	*n/a*	*n/a*

Figure 2.16: Lakemba Overall Parking Demand

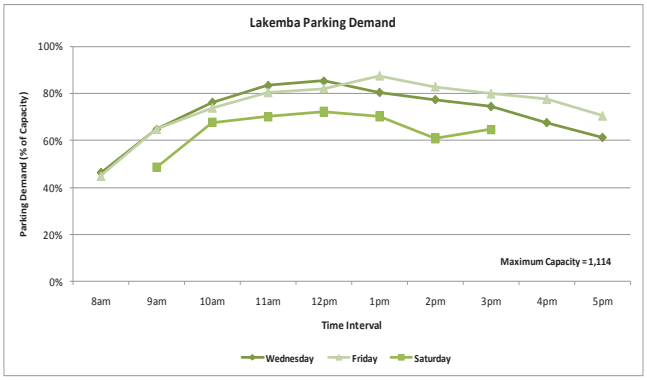


Figure 2.17: Lakemba "Peak Day" Long-Term and Short-Term Parking Demand

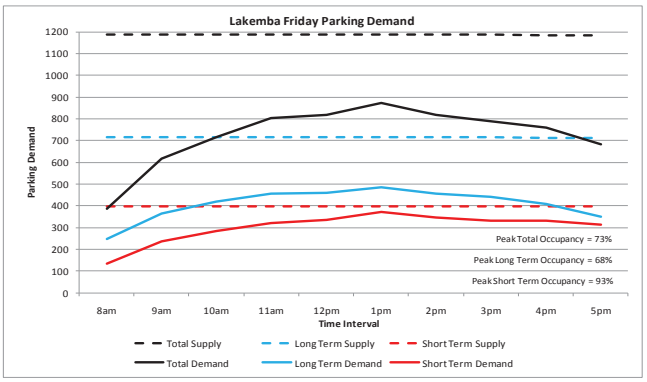


Table 2.12: Narwee Overall Parking Demand Survey Results

Narwee		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	161	161	161	161	161	161	161	161	161	161
	Demand	41	63	87	79	87	93	71	102	103	107
	Occupancy	*25%*	*39%*	*54%*	*49%*	*54%*	*58%*	*44%*	*63%*	*64%*	*66%*
Saturday 27 November	Supply	n/a	161	161	161	161	161	161	161	n/a	n/a
	Demand	n/a	61	67	89	85	118	101	118	n/a	n/a
	Occupancy	*n/a*	*38%*	*42%*	*55%*	*53%*	*73%*	*63%*	*73%*	*n/a*	*n/a*

Figure 2.18: Narwee Overall Parking Demand

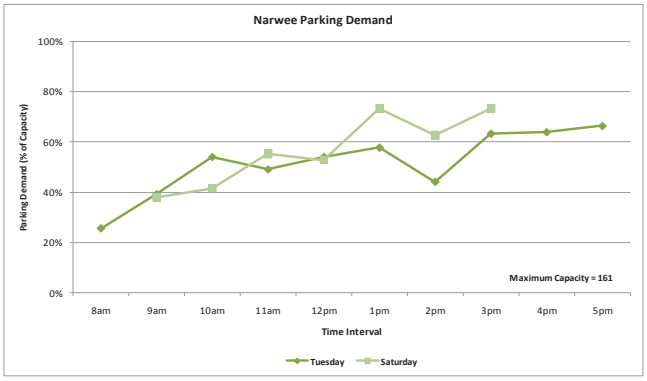


Figure 2.19: Narwee "Peak Day" Long-Term and Short-Term Parking Demand

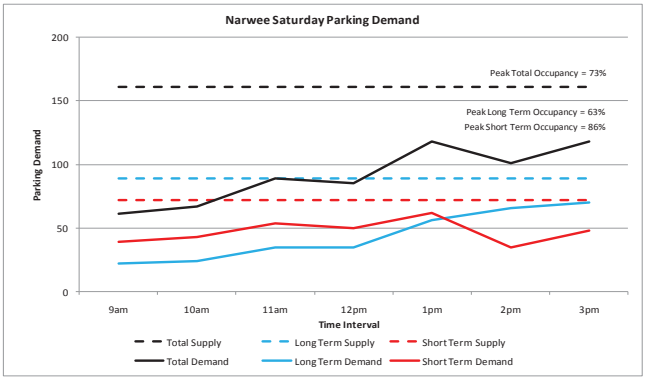


Table 2.13: New Canterbury Road Overall Parking Demand Survey Results

Hurlstone Park (New Canterbury Road)		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	549	549	607	607	607	607	607	578	552	552
	Demand	159	197	248	257	260	246	232	205	203	255
	Occupancy	*29%*	*36%*	*41%*	*42%*	*43%*	*41%*	*38%*	*35%*	*37%*	*46%*
Saturday 27 November	Supply	n/a	607	607	607	607	607	607	607	n/a	n/a
	Demand	n/a	170	197	198	223	276	253	250	n/a	n/a
	Occupancy	*n/a*	*28%*	*32%*	*33%*	*37%*	*45%*	*42%*	*41%*	*n/a*	*n/a*

Figure 2.20: New Canterbury Road Overall Parking Demand

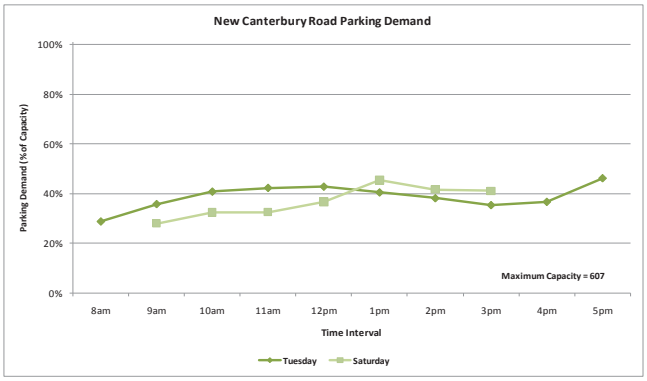


Figure 2.21: New Canterbury Road "Peak Day" Long-Term and Short-Term Parking Demand

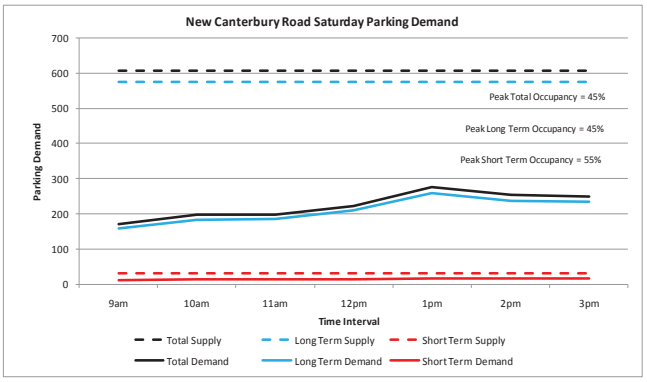


Table 2.14: Punchbowl Overall Parking Demand Survey Results

Punchbowl		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	355	355	355	355	355	355	355	355	355	355
	Demand	239	274	315	330	330	322	296	282	281	280
	Occupancy	*67%*	*77%*	*89%*	*93%*	*93%*	*91%*	*83%*	*79%*	*79%*	*79%*
Friday 26 November	Supply	414	414	414	414	414	414	414	414	414	414
	Demand	209	302	353	372	377	422	360	351	342	343
	Occupancy	*50%*	*73%*	*85%*	*90%*	*91%*	*102%*	*87%*	*85%*	*83%*	*83%*
Saturday 27 November	Supply	n/a	357	357	357	357	357	357	357	n/a	n/a
	Demand	n/a	239	283	285	266	279	262	239	n/a	n/a
	Occupancy	*n/a*	*67%*	*79%*	*80%*	*75%*	*78%*	*73%*	*67%*	*n/a*	*n/a*

Figure 2.22: Punchbowl Overall Parking Demand

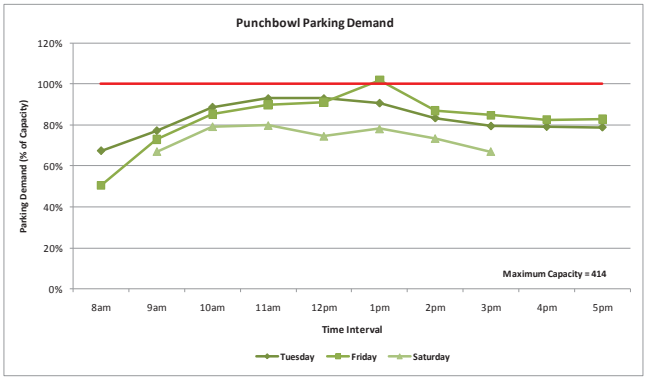


Figure 2.23: Punchbowl "Peak Day" Long-Term and Short-Term Parking Demand

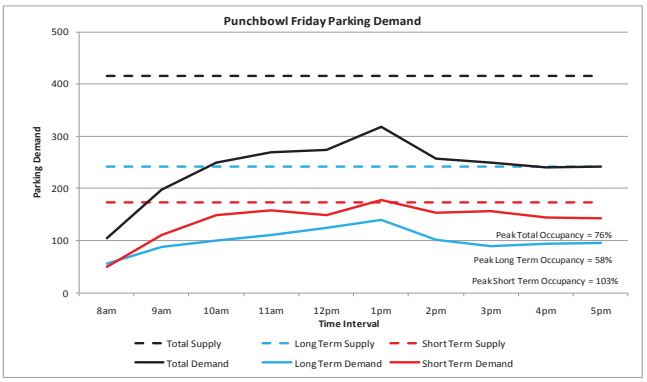


Table 2.15: Wiley Park Overall Parking Demand Survey Results

Wiley Park		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Tuesday 23 November	Supply	87	87	119	119	119	119	119	103	77	77
	Demand	50	58	52	63	61	61	62	53	56	60
	Occupancy	*57%*	*67%*	*44%*	*53%*	*51%*	*51%*	*52%*	*51%*	*73%*	*78%*
Saturday 27 November	Supply	n/a	119	119	119	119	119	119	119	n/a	n/a
	Demand	n/a	53	59	60	61	61	56	61	n/a	n/a
	Occupancy	*n/a*	*45%*	*50%*	*50%*	*51%*	*51%*	*47%*	*51%*	*n/a*	*n/a*

Figure 2.24: Wiley Park Overall Parking Demand

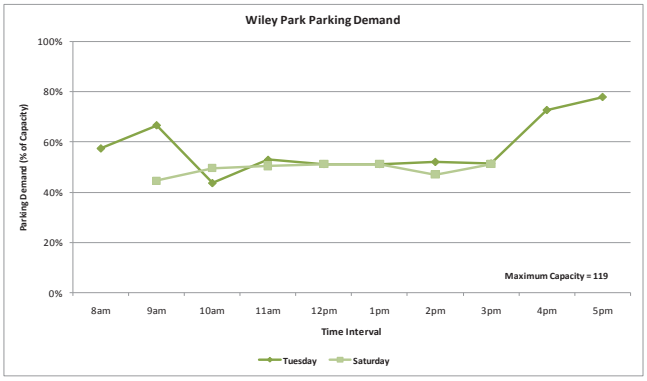
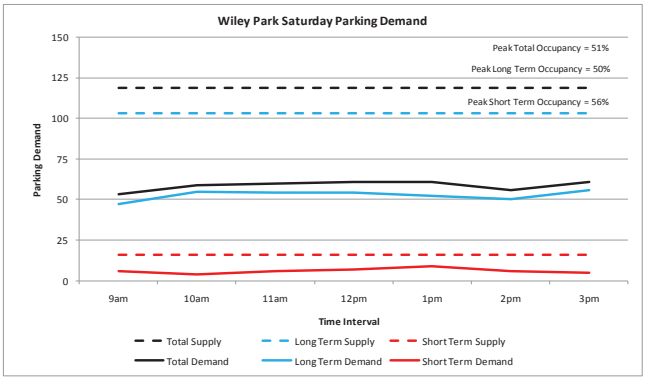


Figure 2.25: Wiley Park "Peak Day" Long-Term and Short-Term Parking Demand



2.4 Car Parking Duration of Stay

Sample duration of stay parking surveys were undertaken by recording number plates during 15-minute patrols from 10:00am to 2:00pm in Lakemba, Belmore and Campsie. The town centres surveyed were chosen to get the best value out of the project by choosing the largest and busiest of the twelve town centres. The surveys included a mix of on-street and off-street parking with timed restrictions to determine the level of compliance with timed restrictions.

The surveys were conducted to coincide with the parking demand surveys as follows:

- Wednesday 24 November – Belmore and Lakemba
- Thursday 25 November – Campsie.

The duration of stay survey locations are shown in Figure 2.26, Figure 2.27 and Figure 2.28.

The key findings from the duration of stay surveys are outlined in the following sections.

Figure 2.26: Duration of Stay Survey Locations – Belmore

Figure 2.27: Duration of Stay Survey Locations – Lakemba

Figure 2.28: Duration of Stay Survey Locations – Campsie

Belmore

Compliance with the 1/2P restriction on Burwood Road between Leylands Parade and Bridge Road was moderate, with 78% of vehicles complying with the restriction and the remaining 22% of vehicles recorded as staying for longer than 30 minutes. Of the vehicles that were recorded as overstaying the timed restriction, 11 vehicles (or 8% of total) were observed as staying for longer than one hour, with three vehicles (or 2% of total) staying beyond three hours.

In the Tobruk Avenue off-street car park, compliance was good, with 86% of vehicles complying with the 2-hour time restriction and the remaining 14% of recorded vehicles staying for longer than permitted. Of the vehicles that stayed for longer than two hours, there were four vehicles (3.5% of total) that were recorded as staying for longer than three hours.

A summary of the duration of stay results for Burwood Road and Tobruk Avenue is shown in Figure 2.29, Figure 2.30 and Figure 2.31, with full details contained in Appendix B.

Figure 2.29: Burwood Road (West) – Leylands Parade to Bridge Road – 1/2P Restriction

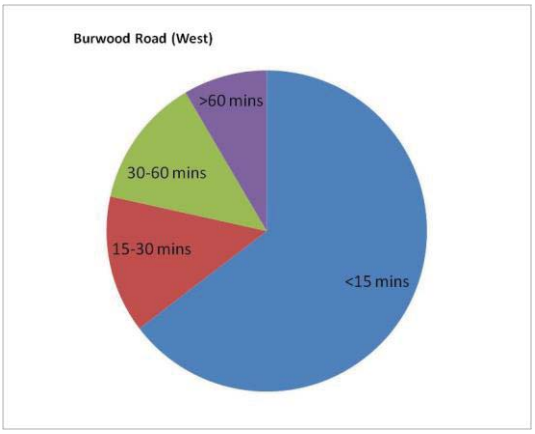
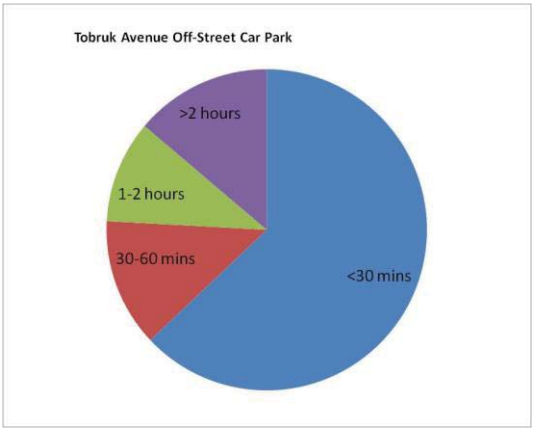


Figure 2.30: Burwood Road (East) – Leylands Parade to Bridge Road – 1/2P Restriction

Figure 2.31: Tobruk Avenue off-street car park – 2P Restriction



Lakemba

Compliance with the 1/2P restriction on Haldon Street between Gillies Street and Oneata Street was moderate, with 75% of vehicles complying with the restriction and the remaining 25% of vehicles

recorded as staying for longer than 30 minutes. Of the vehicles that were recorded as overstaying the timed restriction, 14 vehicles (or 7% of total) were observed as staying for longer than one hour, with one vehicle(or <1% of total) staying beyond three hours.

In the Croydon Street off-street car park, compliance was good, with only 9% of recorded vehicles staying for longer than the 2-hour time restriction. Within this total, there were ten vehicles (3.3% of total) that were recorded as staying for longer than three hours.

A summary of the duration of stay results for Haldon Street and Croydon Street is shown in Figure 2.32 and Figure 2.33, with full details contained in Appendix B.

Figure 2.32: Haldon Street (both sides) – Gillies Street to Oneata Street – 1/2P Restriction

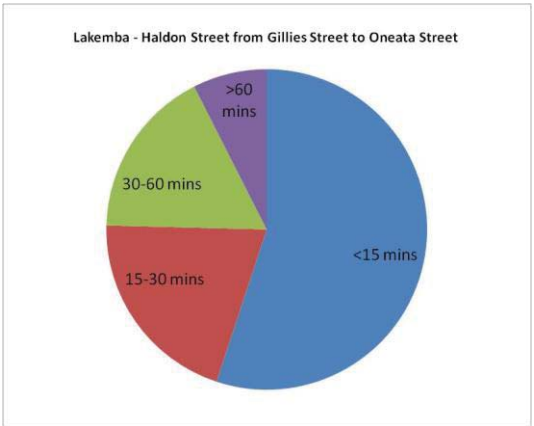
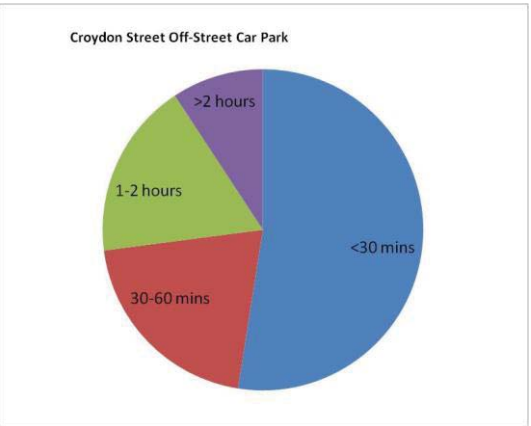


Figure 2.33: Croydon Street off-street car park – 2P Restriction



Campsie

Compliance with the 1/2P restriction on Beamish Street between Evaline Street and South Parade was moderate, with 76% of vehicles complying with the restriction and the remaining 24% of vehicles recorded as staying for longer than 30 minutes. Of the vehicles that were recorded as overstaying the timed restriction, 17 vehicles (or 9% of total) were observed as staying for longer than one hour, with six vehicles (or 3% of total) staying beyond three hours.

In Harold Street, compliance with the 2-hour time restriction was good, with 92% of recorded vehicles complying with the restriction. Of the vehicles that were recorded as overstaying the timed restriction, two vehicles (or 4% of total) were observed as staying for longer than three hours.

In the South Parade off-street car park, compliance was also good, with only 8% of recorded vehicles staying for longer than the 2-hour time restriction. Within this total, there were six vehicles (5% of total) that were recorded as staying for longer than three hours.

A summary of the duration of stay results for Beamish Street, Harold Street and South Parade is shown in Figure 2.34, Figure 2.35, Figure 2.36 and Figure 2.37, with full details contained in Appendix B.

Figure 2.34: Beamish Street (West) – Evaline Street to South Parade – 1/2P Restriction

Figure 2.35: Beamish Street (East) – Evaline Street to South Parade – 1/2P Restriction

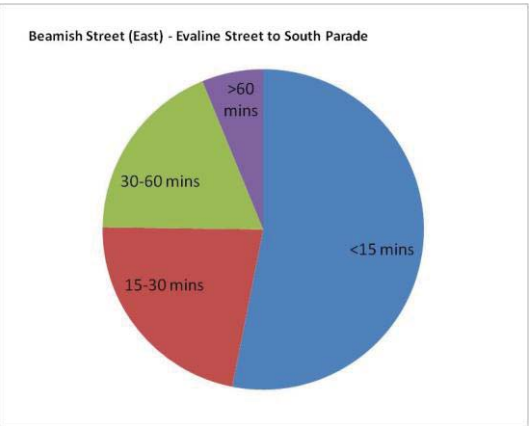


Figure 2.36: Harold Street – south of South Parade – 2P Restriction

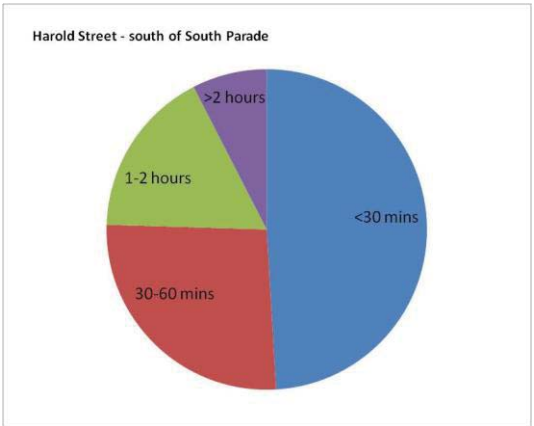
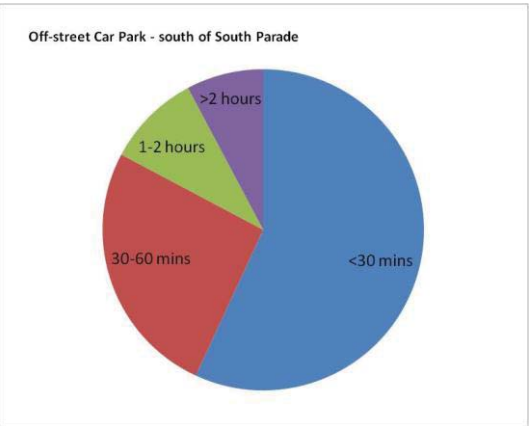


Figure 2.37: South Parade off-street car park (south side) – 2P Restriction



2.5 Public Transport

GTA Consultants has undertaken a review of the existing public transport in the LGA as background in understanding the availability of public transport in providing access to the town centres as this relates to the levels of reliance of private car use.

2.5.1 Bus Network

Bus services in the Canterbury LGA are operated by Sydney Buses (eastern part of LGA) and Punchbowl Bus Company (western part of LGA). Buses operate between the town centres within the LGA as well as servicing areas such as the Sydney CBD, Drummoyne, Rozelle, Hurstville, Rockdale, Bankstown, Burwood and Bondi Junction. Nightride bus routes are also provided from the City and Rockdale, with the majority of town centres serviced by these routes during the night seven days a week.

An overview of the bus networks is shown in Figure 2.38 and Figure 2.39.

Figure 2.38: Sydney Buses Network

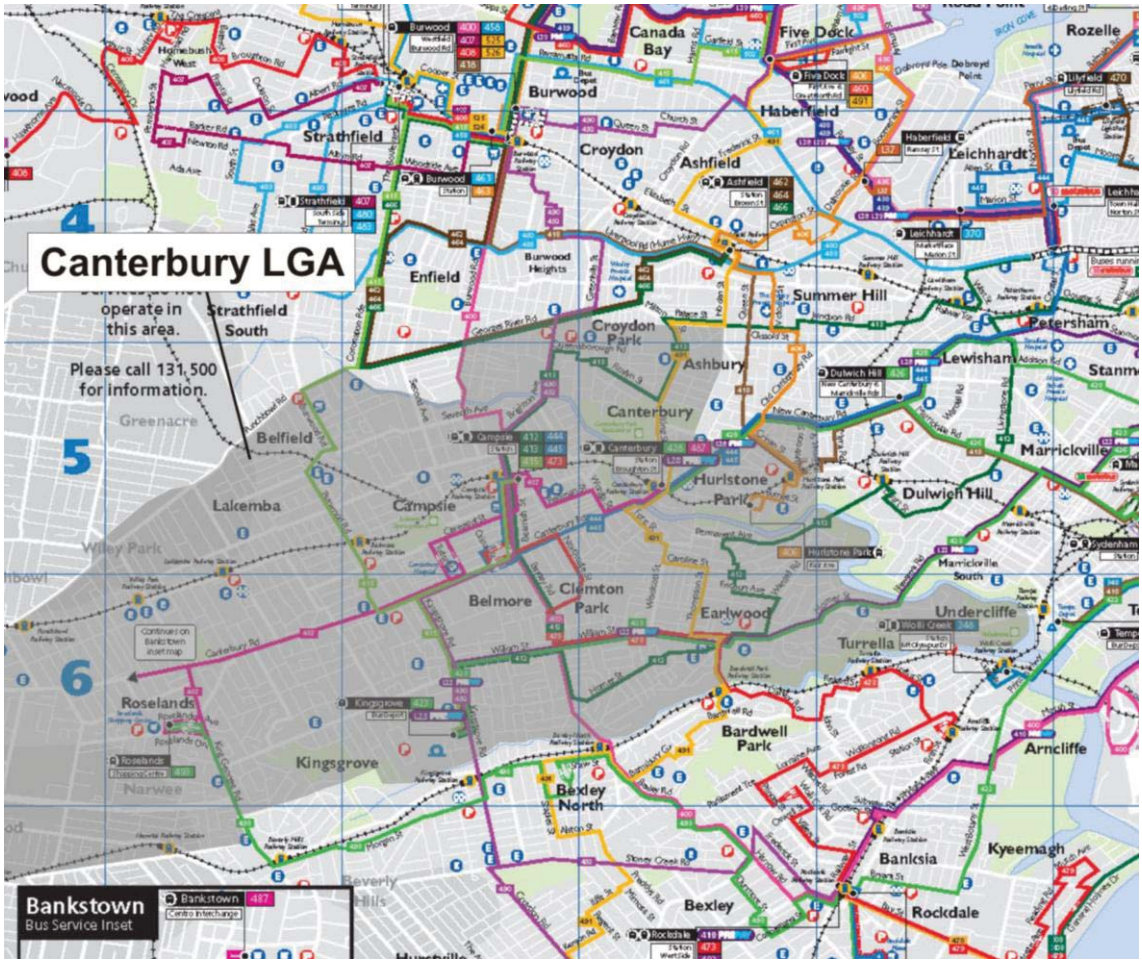
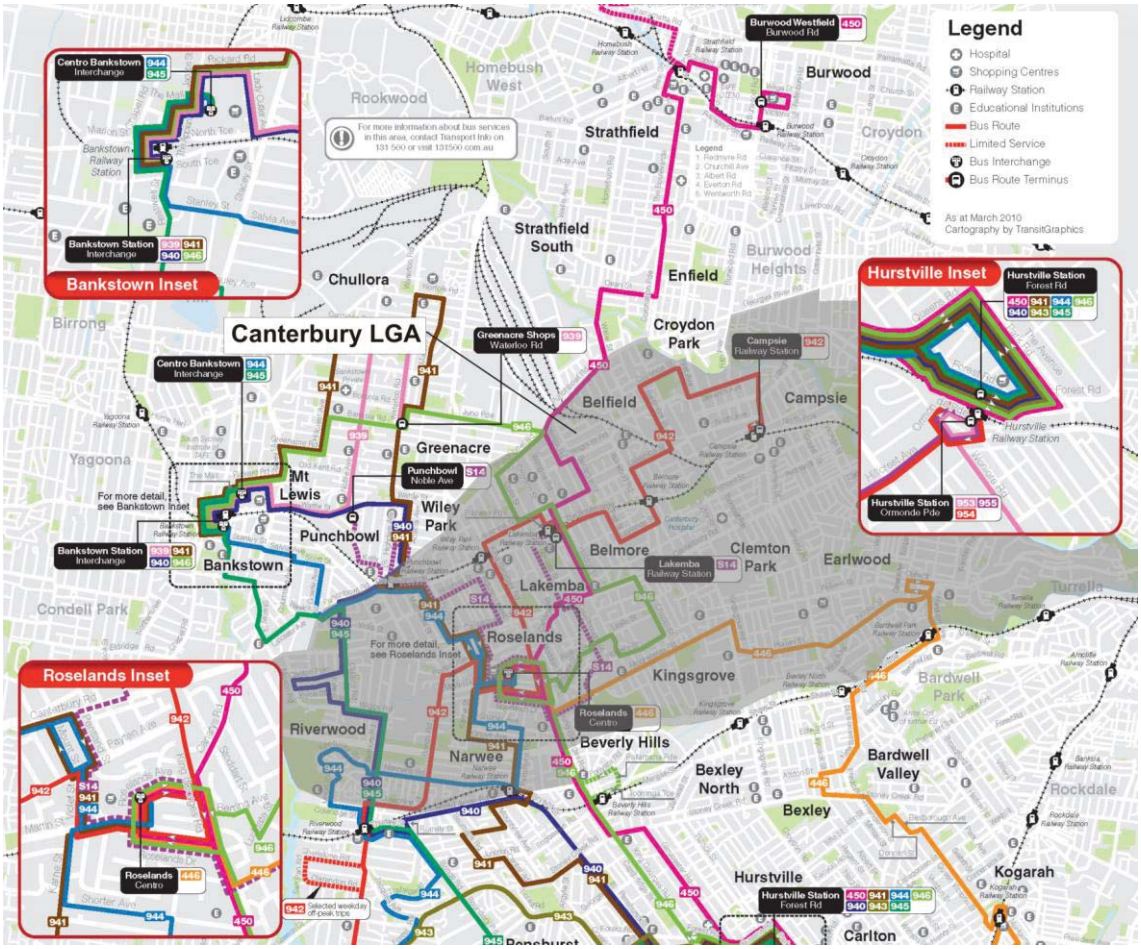
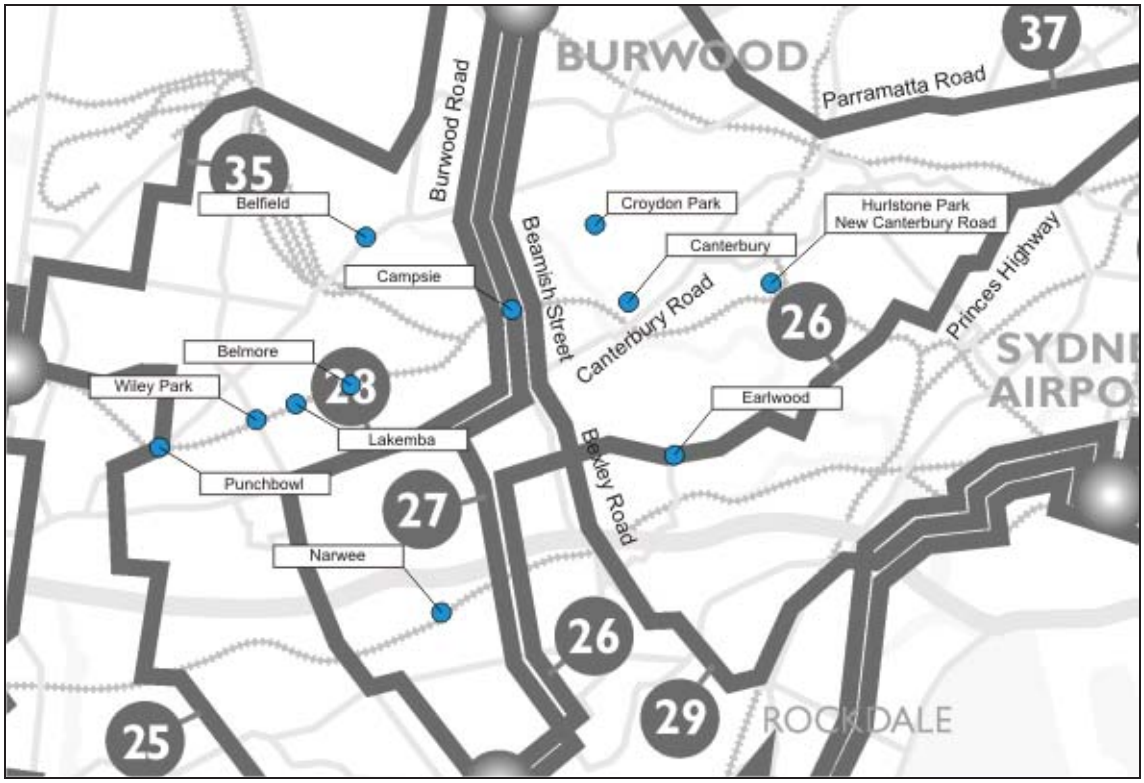


Figure 2.39: Punchbowl Bus Company Network



RMS and Transport for NSW have identified 43 strategic bus corridors across the Sydney metropolitan area with a vision to maximising the efficient use of road space and encouraging greater use of buses. The strategic corridors introduce bus priority measures to improve the reliability of bus services and reduce bus journey times. Such measures include continuous dedicated bus lanes and bus priority at traffic lights. Figure 2.40 presents the strategic corridors that serve the Canterbury LGA.

Figure 2.40: Sydney Metropolitan Strategic Bus Corridors



Base source: Roads and Traffic Authority 2010

Figure 2.40 illustrates that the town centres of Campsie, Earlwood and Punchbowl will be served by the strategic corridors.

2.5.2 Rail Network

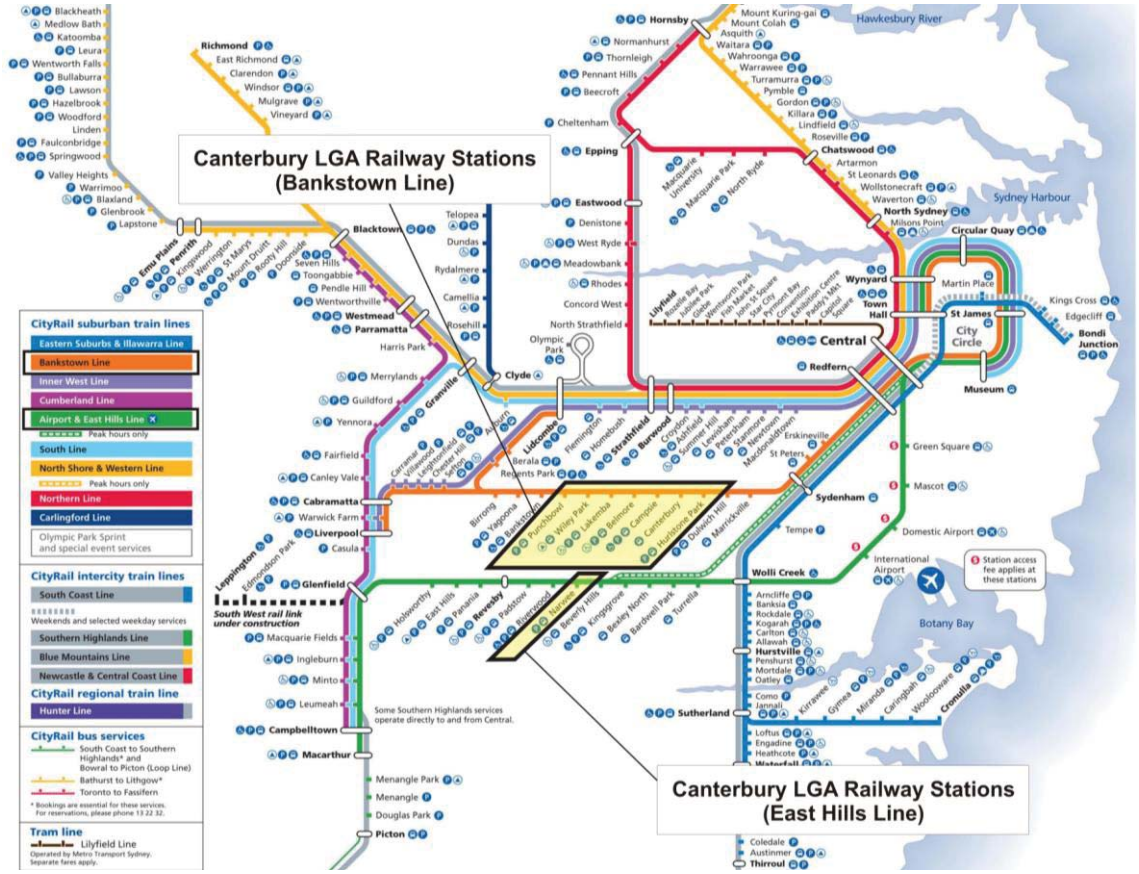
Canterbury LGA contains railway stations located on both the Bankstown and the Airport & East Hills lines.

Those located on the Bankstown line are Belmore, Campsie, Canterbury, Hurlstone Park, Lakemba, Punchbowl and Wiley Park. Services along this line typically operate every 15 minutes in each direction, increasing to 30 minutes after 9:00pm.

Narwee is the only town centre within the scope of this study that is located on the Airport & East Hills line. Services along this line typically operate every 15 minutes in each direction throughout the day.

The stations are shown in Figure 2.41.

Figure 2.41: City Rail Stations



Source: Base map sourced from www.cityrail.info

2.6 Town Centre Land Uses

One of the key inputs required for a parking model is the size and type of land uses within each of the town centre study areas. GTA manually collected land use and floor space data as part of this study, which involved collating an address list and base information, undertaking field surveys to identify land use types and measuring of floor space areas from aerial photography using GIS software.

A summary of land uses and their associated size within each centre is provided in Table 2.16. The land uses fall into the following categories which have been selected to accord with the Canterbury DCP land use classifications:

- Residential Dwelling
- Office (General)
- Retail Shop (split into sizes of: <120sqm, 120sqm – 1000sqm and >1000sqm)
- Hotel/Club
- Restaurant (split into sizes of: <120sqm, 120sqm – 1000sqm and >1000sqm)
- Restaurant (Drive-Through Take Away)
- Child Care Centre
- Medical Centre
- Light Industry
- Service Station

- Community Facility
- Place of Worship
- Entertainment Facility
- Motel
- Educational Establishment
- Recreational Facility
- Recreational Facility (Bowling Green)
- Vacant
- Storage
- Primary School.

Land use size and type was determined by GTA Consultants through field surveys with assistance provided by Council.

Table 2.16 shows the major uses vary between town centres; however the common uses included Office, Retail Shop (in particular between 120sqm and 1000sqm), Restaurant and Light Industry.

Due to their size, Belmore and Campsie have been split into two precincts. In both cases, Precinct 1 is north of the railway line and Precinct 2 is south of the railway line.

2.6.1 Land Use Assumptions

The area of the land use at each property was measured as Gross Floor Area (GFA). In order to convert GFA to units that were more applicable to standard car parking rates, a number of assumptions had to be made.

These assumptions are based on data obtained from GTA Consultants database and our experience and include:

- Residential Dwelling – where more than one unit is within a lot and it was not clear how many dwellings were on the property, each unit was assumed to have an area of 75sqm.
- Hotel/Club – 50 % of Gross Floor Area was public floor area.
- Child Care Centre – 10sqm per child.
- Medical Centre – 100sqm per medical room (includes reception area and waiting room).
- Motel – 50sqm per room.

Table 2.16: Land Use Data (2010)

Business Types	Units	Belfield	Belmore Precinct 1	Belmore Precinct 2	Belmore Total	Campsie Precinct 1	Campsie Precinct 2	Campsie Total	Canterbury
Residential	no. of dwellings	76	118	108	226	507	299	806	179
Office (General)	sqm	8427	278	8280	8558	9367	16748	26115	3866
Retail Shop (<120sqm)	sqm	978	1264	2413	3677	2490	5113	7603	908
Retail Shop (120sqm-1000sqm)	sqm	2453	2929	6129	9058	8036	13167	21203	4400
Retail Shop (>1000sqm)	sqm	1365	0	0	0	0	16267	16267	6619
Hotel/Club	sqm Public Floor Area	391	0	2208	2208	427	1100	1526	691
Restaurant (<120sqm)	sqm	93	450	452	903	261	1411	1672	444
Restaurant (120sqm-1000sqm)	sqm	1366	997	1197	2194	1781	2083	3864	0
Restaurant (>1000sqm)	sqm	0	0	0	0	0	0	0	0
Restaurant - drive-through take-away	seats	0	0	0	0	0	0	0	0
Child Care Centre	children	0	47	0	47	16	0	16	0
Medical Centre	room	3	1	10	10	29	71	100	5
Light Industry	sqm	387	0	5644	5644	513	0	513	17341
Service Station	sqm Retail Space	240	0	0	0	0	0	0	0
Community Facility	sqm	275	1090	0	1090	0	2632	2632	0
Place of Worship	sqm	0	532	599	1131	0	2855	2855	0
Entertainment Facility	sqm	0	700	801	1501	1236	209	1445	0
Motel	room	8	0	0	0	13	0	13	0
Educational Establishment	sqm	0	0	700	700	733	989	1722	0
Recreational Facility	sqm	0	1240	354	1594	467	0	467	110
Recreational Facility (Bowling Green)	bowling greens	0	0	0	0	0	0	0	0
Vacant	sqm	590	431	951	1382	2593	3529	6122	2397
Storage	sqm	0	0	0	0	734	3391	4125	3317
Primary School	students	0	0	0	0	0	0	0	0

Business Types	Units	Croydon Park	Earlwood	Hurlstone Park	Lakemba	Narwee	New Canterbury Road	Punchbowl	Wiley Park
Residential	no. of dwelling	75	98	169	771	25	237	290	215
Office (General)	sqm	1533	8528	1621	16928	763	2277	3688	180
Retail Shop (<120sqm)	sqm	1624	2759	1030	5100	1813	1140	3464	958
Retail Shop (120sqm-1000sqm)	sqm	1793	13822	1625	13426	1604	4265	5550	1229
Retail Shop (>1000sqm)	sqm	0	2070	0	2712	0	0	0	0
Hotel/Club	sqm Public Floor Area	350	975	0	3572	373	4771	400	509
Restaurant (<120sqm)	sqm	266	462	100	569	356	92	175	0
Restaurant (120sqm-1000sqm)	sqm	987	2185	0	2522	451	544	993	0
Restaurant (>1000sqm)	sqm	0	0	0	0	0	0	0	0
Restaurant - drive-through take-away	seats	140	65	0	0	0	0	0	0
Child Care Centre	children	24	0	0	68	0	69	0	0
Medical Centre	room	3	39	5	46	6	6	12	2
Light Industry	sqm	8899	0	0	1776	100	2426	0	0
Service Station	sqm Retail Space	225	531	0	124	323	335	0	0
Community Facility	sqm	0	1185	0	4527	0	400	702	0
Place of Worship	sqm	855	2375	0	2166	0	1945	1110	0
Entertainment Facility	sqm	0	792	0	0	0	0	380	0
Motel	room	9	0	0	11	12	9	10	9
Educational Establishment	sqm	0	632	0	703	85	144	133	0
Recreational Facility	sqm	0	331	0	466	0	168	425	0
Recreational Facility (Bowling Green)	bowling greens	0	0	2	0	0	0	0	0
Vacant	sqm	125	719	1205	1554	964	1830	1792	218
Storage	sqm	78	0	0	0	0	233	180	302
Primary School	students	0	351	0	1025	0	298	0	0

3. Consultation and Community Feedback

3.1 Overview

Consultation undertaken during Stage 1 of the study included a workshop with community representatives and phone conversations with relevant transport authorities. Consultation was important to give key local representatives the opportunity to communicate key car parking issues and opportunities for the town centres.

3.2 Workshop 1- Existing Issues and Opportunities

KJA was responsible for facilitating the workshop of community representatives, which was held on the evening of Tuesday 7 December 2010 at the Council offices. The workshop provided an opportunity for the relevant community group representatives to communicate existing issues and opportunities for the town centres in relation to parking. The format of these workshops included a presentation given by GTA Consultants and then interactive small group activities to seek input from the community.

The workshop included attendees from the following town centres:

- Belfield
- Canterbury
- Hurlstone Park
- Belmore
- Narwee
- Lakemba.

To obtain feedback about those centres which were not represented at the workshop, KJA made follow-up calls and undertook one-on-one interviews with the nominated representatives. However, it is noted that feedback was unable to be obtained specifically for Campsie or Punchbowl.

An extensive list of issues was obtained through this process, which included those that applied across many or all centres as well as local concerns that were specific to some centres. The findings are outlined in Table 3.1 to Table 3.9 and have been incorporated into the development of the draft Parking Strategies.

General Issues

The general issues and concerns relevant to many or all town centres are summarised in Table 3.1. Issues specific to each town centre are summarised in Table 3.2 to Table 3.10.

Table 3.1: Summary of General Issues and Opportunities for all Town Centres

Consultation Category	Consultation Feedback
Parking Management and Overstay	Overstay was noted as occurring within restricted parking spaces, making it difficult for short-term visitors to find appropriate parking. The size and location of loading and delivery zones was also noted as being an issue for a number of centres. In some centres, it was noted that the loading zones were too long and took away from public parking, whilst in other centres the supply of loading zones was inadequate, with trucks and large vehicles double-parking to deliver to local businesses.
Illegal Parking and Enforcement	The need for greater enforcement was raised by many of the representatives, which would help to overcome some of the observed illegal parking, such as: • Parking overstay • Double parking, particularly in side streets • Parking illegally on footpaths and in bus zones • Not parking within designated spaces (e.g. trucks were seen to park across several spaces) • Illegal use of disabled stickers.
Parking Supply	• The need for additional parking spaces within the town centres was raised by many of the representatives, particularly to cater for times of peak parking activity.
Land Use	• The density of activities in the town centres was raised as a parking issue, mainly as a large number of people are attracted to the one location for a range of trip purposes. • The impact of changing land uses and new developments was also raised as an item for consideration in the future planning of the centres.
Road safety	• The town centre representatives were concerned about safety within the town centres and the relationship between road safety and parking supply and demand. Many of the centres are located on main arterial roads, such as Canterbury Road, King Georges Road and Punchbowl Road, which carry high volumes of traffic both during and outside of peak periods. There are concerns that traffic volumes will increase in the future, making it more difficult to safely access on-street parking spaces. • Another concern relating to high traffic volumes is the creation of retail "wastelands" due to clearways and "No Stopping" restrictions.
Opportunities	The representatives noted some opportunities for consideration which could help to alleviate parking issues, such as: • Investigate potential park-and-ride areas outside of the centres. • Install cycle racks / lockers at train stations to encouraging cycling as part of rail travel.

Belfield

Specific issues and opportunities relating to Belfield are summarised in Table 3.2.

Table 3.2: Summary of Belfield Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• There are three take-away shops which have problems with parking over-stays in restricted parking areas. The customers from the two main restaurants park for 3 to 4 hours, which limits parking available for take-away customers. • Shopkeepers consistently park outside their shops for long periods.
Illegal Parking and Enforcement	• Current restrictions are not adhered to and are not enforced.
Parking Supply	• Employees working in shops want to be able to park close to their workplace. • No available parking anytime along Punchbowl Road between Belfield Lane and Linda Street.
Land Use	• Belfield has two major restaurants, which results in the area being very busy during Friday night, Saturday lunch, Saturday night, Sunday lunch and Sunday night. • The Lebanese Club adds to the volume of people and parking demand. • The Korean church located four streets south of the shopping centre on Burwood Road, is very busy on Sundays. Parishioners park in all local streets which results in the area becoming very congested.
Opportunities	• Tract of vacant land between Burwood Road and Linda Street is a site for potential parking in the future.

Belmore

Specific issues and opportunities relating to Belmore are summarised in Table 3.3.

Table 3.3: Summary of Belmore Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• The loading zone along Burwood Road is too big and has taken up too many car parking places. • There is a lot of rubbish and furniture in Paragon Lane and Acacia Lane which may prevent deliveries being made via the back of shops. Instead deliveries are made from Burwood Road.
Illegal Parking and Enforcement	• Better enforcement of restricted parking is needed. • Improved enforcement of parking restrictions needs to occur and policing of illegal use of disabled parking stickers should also be investigated. • Cars frequently double park along Burwood Road.
Parking Supply	• Parking is a problem along Burwood Road, especially for customers. • Shop owners and employees often park on Burwood Road in front of their shop instead of behind their shop where there is parking on-site. Possible reasons why people are not parking behind their shops include having to walk further and not being able to park undercover.
Land Use	• Short-stay shopping is common.
Opportunities	• Should consider loading zones in both Acacia and Paragon Lanes. This is where trucks often deliver goods anyway. • Taxi stand in front of the club is always empty and should be allocated for parking instead

Canterbury

Specific issues and opportunities relating to Belmore are summarised in Table 3.4.

Table 3.4: Summary of Canterbury Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay Illegal Parking and Enforcement	• Bus stops are commonly used as a drop-off zone at the railway station.
Parking Supply	• The parking needs of staff, businesses and customers are not currently being met and the restricted parking areas only operate effectively for about 50% of the time. • Those who are parking for shopping usually stay for a short period of time; however there are a number of commuter parkers who stay for long durations. • There are no parking areas that are being underutilised.
Opportunities	• The whole area is about to change through development. Current parking demand may change significantly.

Croydon Park

Specific issues and opportunities relating to Croydon Park are summarised in Table 3.5.

Table 3.5: Summary of Croydon Park Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• From a business owner's perspective, higher parking turnover is good for business. Need to ensure the restrictions are not too short though, with 1 or 2 hour restrictions deemed to be appropriate.
Illegal Parking and Enforcement	• Some customers of shops in Croydon Park will park in McDonalds and walk to the nearby shops.
Parking Supply	• Overall insufficient parking. Would like a much larger car parking station. • Georges River Road is a major arterial road. AM and PM clearways exist on alternate sides. • Side streets have some parking which is used by visitors to the centre. • There is a parking station near the school. • Insufficient parking opposite the Serviceman's Club. • Area is not serviced by public transport so employees in Croydon Park need to drive and find parking in the streets.
Road safety	• Cars turning into the McDonalds car park slow traffic along Georges River Road.
Opportunities	• Having three councils govern this area has resulted in efforts being applied inconsistently across the town centre. Need greater collaboration between the three Councils.

Earlwood

Specific issues and opportunities relating to Earlwood are summarised in Table 3.6.

Table 3.6: Summary of Earlwood Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• There is not enough on-street parking along Homer Street and people often overstay the restricted times.
Illegal Parking and Enforcement	• Parking rangers follow the same routine and employees know this. Need to have more random inspections.
Parking Supply	• Generally there is insufficient parking across the town centre to cater for staff and customer needs. • A lot more disabled parking is needed across the town centre and along Homer Street. • Parking underneath Woolworths and near the fruit shop does assist with parking however they are often full. • There is some additional parking behind Woolworths between Lewins Street and Earlwood Avenue which assists with demand but does not solve the issue. • There is some parking provided in Homer Lane behind the solicitor's office; however these spaces are usually used by clients of the solicitors.
Opportunities	• The large terminus car park is not well utilised. Needs better signage when coming into Earlwood from Marrickville.

Hurlstone Park

Specific issues and opportunities relating to Hurlstone Park are summarised in Table 3.7.

Table 3.7: Summary of Hurlstone Park Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	The postal zone along Crinan Street is oversized. The disability bay along Duntroon Street near the station is rarely used. Need as much convenient short-term parking as possible so that people can access shops and services.
Illegal Parking and Enforcement	Some drivers are double parking along Crinan Street
Parking Supply	Creation of more parking would be very beneficial for businesses
Road safety	The pedestrian crossing and the bus stop should be reversed so that the bus stop is located on the departure side of the crossing not the approach. This would improve safety for pedestrians.
Opportunities	Cycle racks and lockers are needed at Hurlstone Park Railway Station. Consider installing a cycle park-and-ride. Investigate opportunities for railway land (along Floss Street) to be used as a car park for longer term park and ride. Consider any impacts on parking from the new light rail terminus. Investigate the opportunity for a short term drop-off/ pick-up bay at the station on Duntroon Street

Lakemba

Specific issues and opportunities relating to Lakemba are summarised in Table 3.8.

Table 3.8: Summary of Lakemba Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• Half-hour parking along Haldon Street is too short. One hour parking at least is needed for people to do their shopping. The current conditions affect businesses as customers are too nervous to park on Haldon Street. However half hour parking near banks on Haldon Street is suitable. Need to look at mix of shops. • Shops along Haldon Street use car parking spaces for deliveries. Need more loading zones on Haldon Street and existing ones need to be policed as cars also park in these zones. • Need better signage to direct drivers to parking at the back of the shops near Gillies Lane. • Trucks taking up car places for deliveries.
Illegal Parking and Enforcement	• Double parking occurs in side streets and parking in bus stops also occurs. • People are overstaying in restricted parking areas.
Parking Supply	• Current parking conditions don't address the needs of businesses, staff and customers. There is no off- street parking for shops north of the rail line. • Four-hour off-street parking is not suitable for employees in Lakemba who have to find unrestricted on-street parking to ensure they are not fined. • Back of Quigg Street parking is often full. • Off-street parking areas are well utilised.
Land Use	• People are shopping for long hours and travel from a wide catchment to visit coffee shops and internet cafes.
Road safety	• Drivers making U- turns on Haldon Street affect traffic
Opportunities	• Need better lighting for parking around station. • The old IGA site (corner of Lakemba Street and Haldon Street) burnt down three years ago, with an opportunity to provide additional parking. If site is developed for other purposes need to consider impact on parking in the area. • Consider double storey car park on the corner of Quigg Street South and The Boulevard. • Consider the provision of a roundabout at the intersection of Haldon Street and Oneata Street to accommodate U- turn movements that are currently occurring.

Narwee

Specific issues and opportunities relating to Narwee are summarised in Table 3.9.

Table 3.9: Summary of Narwee Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• Parking in Fisher Lane / Place is always full despite time restrictions
Illegal Parking and Enforcement	• Cars ignore 1 hour zone along Station Lane. Vehicles also park across car spaces and double park in Station Lane. More parking is needed especially in the afternoon. • Cars park in bus stop near the corner of Station Lane and Graham Road. • Have never seen a parking inspector.
Parking Supply	• The corner of Penshurst and Hannans Road is used as a public parking space
Opportunities	• Station car park on Hannans Road is always full. Investigate southern side after new road works are completed.

Wiley Park

Specific issues and opportunities relating to Wiley Park are summarised in Table 3.10.

Table 3.10: Summary of Wiley Park Issues and Opportunities

Consultation Category	Consultation Feedback
Parking Management and Overstay	• Clearway in front of shops and weekend congestion along King Georges Road is an issue.
Parking Supply	• The parking station on the corner of Lakemba Street and Hillard Street and the parking station off Lakemba Street opposite Hillard Street are difficult to access and are often empty.
Opportunities	• Consider timed on-street parking along Lakemba Street between McCourt and Fairmount Streets (outside of study area) and along The Boulevard between Alice Street South and Kathleen Street.

3.3 Workshop 2 – Draft Parking Management Strategies

In order to present the draft parking management strategies prepared for the town centres, GTA Consultants contacted members of the relevant Economic Development Committees and Chamber of Commerce in July 2011 to discuss the recommendations and gain initial feedback. The comments provided were used to inform the final draft parking management strategies.

3.4 Transport Stakeholder Consultation

GTA Consultants contacted relevant Transport authorities via phone and email to understand the existing issues and opportunities in relation to parking in the town centres and to seek their input into the development of the draft parking strategy. Relevant authorities included Sydney Buses, Punchbowl Bus Company, Chesterton International (representing State Rail Authority), RailCorp and Transport Construction Authority (TCA) regarding commuter car parks at railway stations.

Feedback was only received from the Punchbowl Bus Company, which noted the following concerns:

- Along Haldon Street in Lakemba, some of the bus bays provided are too short. Cars are also observed to be parking in the bays, causing buses to block the through traffic whilst they drop-off and pick-up passengers.
- The bus stop located outside No. 274-278 The Boulevard in Punchbowl is in an awkward position for buses turning from Punchbowl Road.
- Some bus bays in Punchbowl are too short, while others are large enough to accommodate two buses.

Information obtained from the TCA website indicated that a new interchange upgrade for Narwee is currently in the planning and design phase. There are no other plans to upgrade or provide additional commuter parking at any of the other railway stations in the town centres.

4. Summary of Existing Conditions Assessment

The key findings and issues that were identified through the existing conditions assessment are outlined as follows.

Parking Supply

i Various timed restrictions were available in most centres. These have been allocated consistently across the centres, with 1/2P restrictions, particularly on the main street and within the central area of each centre, 1P and 2P provided within the surrounding streets and 2P or more within public off-street parking areas.

ii Very few high-turnover spaces for stays of 15 minutes or less have been provided within the centres.

iii Large centres such as Belmore and Lakemba contained fewer off-street parking spaces than on-street spaces, with off-street parking supply in Campsie and Earlwood relatively high in comparison.

iv Centres which have a high proportion of unrestricted parking spaces relative to spaces with timed-restrictions include Canterbury, Campsie, Hurlstone Park and Croydon Park.

Parking Demand

i Weekday peak overall parking demand was:

- High (>80% occupancy) in Campsie, Hurlstone Park, Lakemba and Punchbowl.
- Moderate (50-80% occupancy) in Belmore, Canterbury, Croydon Park, Earlwood, Narwee and Wiley Park.
- Low (<50% occupancy) in Belfield and Hurlstone Park (New Canterbury Road).

ii Saturday peak parking demand was:

- High (>80% occupancy) in Belmore and Campsie.
- Moderate (50-80% occupancy) in Belfield, Croydon Park, Earlwood, Hurlstone Park, Lakemba, Narwee, Punchbowl and Wiley Park.
- Low (<50% occupancy) in Canterbury and Hurlstone Park (New Canterbury Road).

iii For the busiest surveyed day, short-term parking demand was:

- High (>80% occupancy) in Belfield, Belmore (Precinct 1 and 2), Campsie (Precinct 1 and 2), Narwee, Lakemba, Punchbowl.
- Moderate (50-80% occupancy) in Canterbury, Croydon Park, Earlwood, Hurlstone Park, New Canterbury Road and Wiley Park.
- Low (<50% occupancy) in no centres.

iv For the busiest surveyed day, long-term parking demand was:

- High (>80% occupancy) in Belmore (Precinct 2), Campsie (Precinct 2), Croydon Park, Earlwood, Hurlstone Park.
- Moderate (50-80% occupancy) in Belfield, Belmore (Precinct 1), Campsie (Precinct 1), Lakemba, Narwee, Punchbowl, Wiley Park.
- Low (<50% occupancy) in Canterbury, New Canterbury Road.

v On a weekday, peak parking occupancy in the smaller centres (e.g. Croydon Park, Belfield, Wiley Park and Hurlstone Park) occurred late in the afternoon at around 5:00pm and

between 11:00am and 1:00pm in the larger centres (e.g. Campsie, Belmore, Earlwood, Lakemba and Punchbowl).

vi On a Saturday the majority of centres experienced peak occupancy between 10:00am and 2:00pm, which coincided with lunchtime and late morning shopping trips.

vii On-street short-term parking is essentially at capacity at 85% occupancy, where beyond this occupancy vacant spaces are difficult to locate. Parking demand for short-term time-restricted spaces was greater than or equal to 85% for the following centres:

- Campsie (weekday and Saturday)
- Lakemba (weekday)
- Belmore (Saturday)
- Punchbowl (weekday and Saturday).

Parking Duration of Stay

i Compliance with the 1/2P on-street parking restriction in Belmore, Lakemba and Campsie was average to good, with at least 75% of vehicles parking within the 30-minute time limit.

ii Compliance with the 2P parking restriction in off-street parking areas was very good, with less than 10% of vehicles parking for longer than the 2-hour time limit.

iii Up to 5% of vehicles were observed to remain in the same parking space for greater than three hours.

iv Generally, there does not appear to be a significant issue with overstay in the areas surveyed.

Key Community Issues

Community representatives for the town centres raised a number of common parking issues relevant to many or all of the town centres as well as local parking issues which specifically apply to individual town centres. A summary of the key common parking issues for the town centres within the Canterbury LGA is as follows:

- Not enough short term parking
- Overstay of short term parking and the need for greater enforcement
- No parking during clearway times
- Inadequate provision of loading zones (Size, location etc)
- Not enough clear directional signage to car parks
- Concern for safety on main arterial roads in terms of car access and crossing of the road
- Parking pressures during prayer times (Punchbowl and Lakemba).

5. Existing Car Parking Models

5.1 Background

To assess existing and future car parking requirements for each of the 12 town centres within the Canterbury LGA, an internally developed car parking model technique has been used. The car parking model has been widely applied across Australia to assist in determining future car parking requirements of a wide variety of town and city centres. More details on the car parking model technique are presented below.

Car parking models have been prepared to estimate the car parking generating characteristics for each town centre. Using the car parking rates determined through the preparation of a model, car parking demand can be estimated for new development or predicted growth within the town centre, which reflect its unique characteristics.

The following inputs are required when developing a Car Parking Model:

- land use data
- car parking rates derived from uses contained within the applicable study precinct
- temporal distributions.

The above items and the car parking model technique are described in more detail below.

5.2 Land Use Data

Table 2.16 summarises the existing land uses within each town centre in accordance with the land use categories identified in the City of Canterbury's DCP 20. Table 2.16 indicates that the four major land use categories are Office, Retail Shop, Restaurant and Light Industry. As a consequence, the modelling of the car parking characteristics are influenced primarily by the car parking rates associated with these land uses, with the balance of the other land uses being of lesser significance.

5.3 Car Parking Rate

As a starting point, the car parking rates in the City of Canterbury's DCP 20, or where not available, industry standard and sample car parking rates from the GTA Consultants database, were adopted for use in each car parking model. These data sources represent 'typical' car parking rates.

5.4 Temporal Distributions

Each land use has a different characteristic profile of parking accumulation throughout the day which is often referred to as the temporal profile. The temporal profile for each land use corresponds to the way in which the demand for car parking peaks at different times throughout the day, and these differ for each land use. The profile for the different land uses were generated from GTA Consultants database which contained parking demand profiles based on actual surveys.

Figure 5.1 represents the temporal profile of parking accumulation over a weekday for a number of land uses to demonstrate the way in which peak parking demand occurs at different times.

Figure 5.2 represents the temporal profile of parking accumulation for a number of uses on a Saturday.

Figure 5.1: Base Temporal Parking Profiles of Major Uses – Weekday

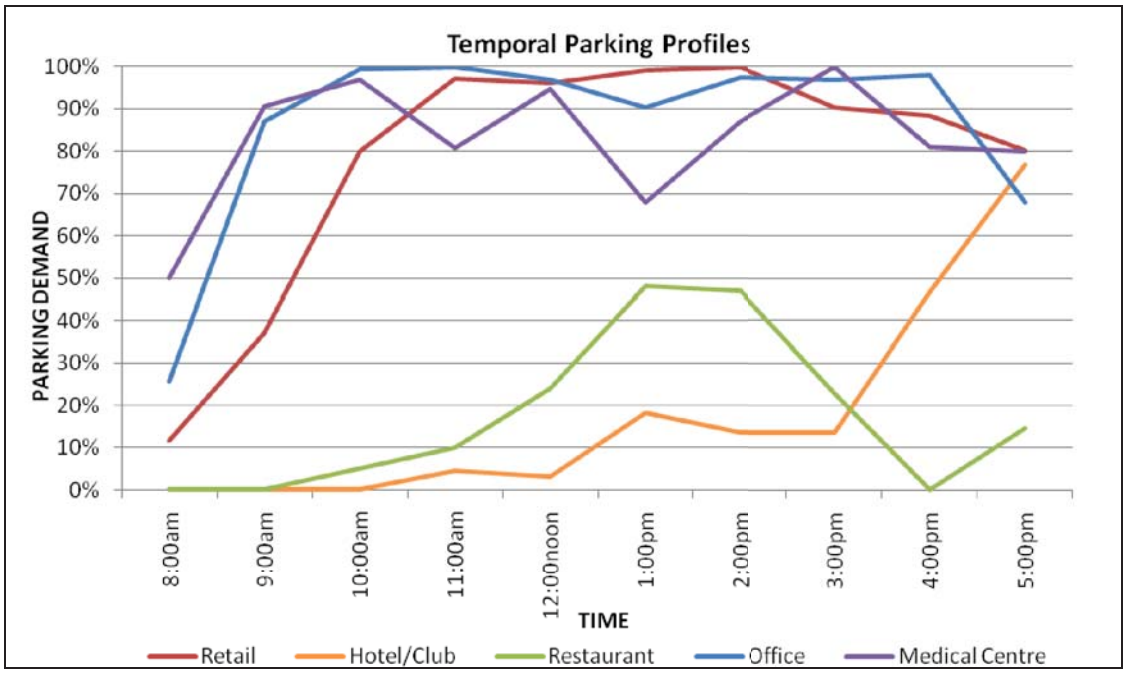


Figure 5.2: Base Temporal Parking Profiles of Major Uses - Saturday

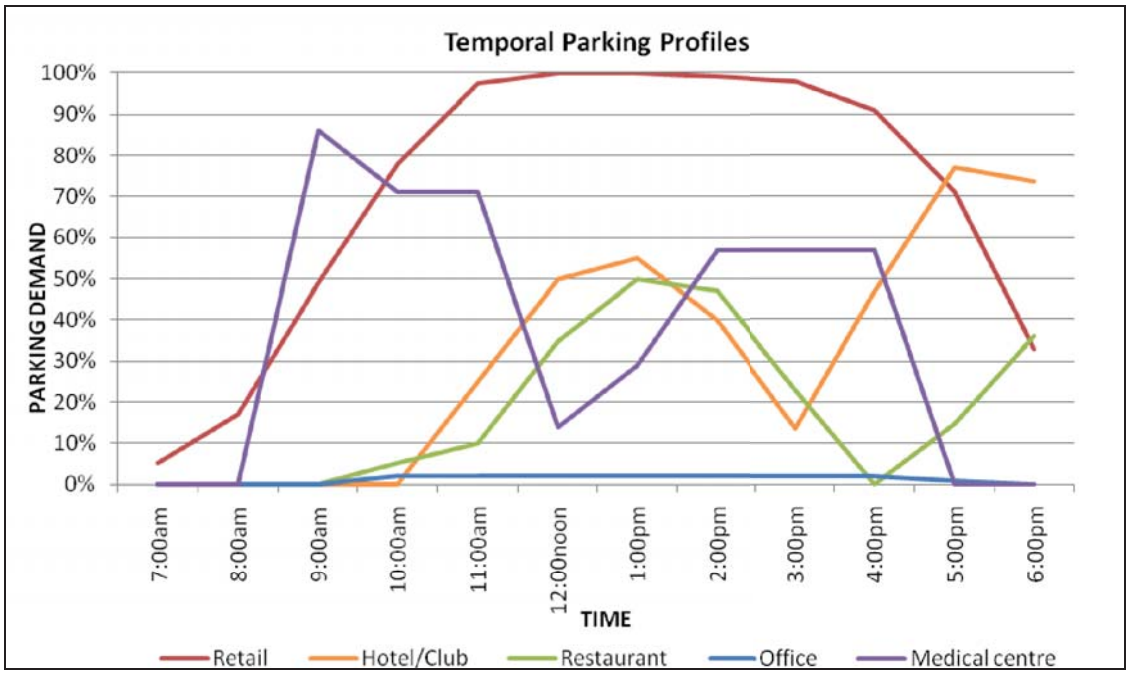


Figure 5.1 and Figure 5.2 show how different uses peak at different times of the day. With different peak times for each use, this allows the total number of parking spaces required in each town centre to be lower than it would otherwise be if the total of all individual peaks were added. This 'sharing' of spaces at the peak times is critical in determining the overall demand for each town centre.

5.5 Base Model

5.5.1 Peak Day

Many of the town centres have developed around railway stations and as such the parking surveys undertaken recorded a mixture of commuter and town centre parking.

To determine the peak parking day for each town centre, weekday commuter parking demand was removed from the analysis, as this parking is not directly associated with the operation of the town centres. Commuter parking locations were determined through site inspections and aerial photography.

The parking demand at 8:00am on the identified streets with no parking restrictions close to the train stations, as well as commuter car parks, was removed from the analysis which provided a more realistic demand for the land uses within the town centre on a typical weekday.

Based on the above analysis, the peak days for the town centres are:

- Belfield – Saturday
- Belmore – Saturday
- Campsie – Saturday
- Canterbury – Saturday
- Croydon Park – Saturday
- Earlwood – Saturday
- Hurlstone Park – Tuesday
- Lakemba – Friday
- Narwee – Saturday
- New Canterbury Road – Saturday
- Punchbowl – Friday
- Wiley Park – Saturday.

All surveys were conducted on 'typical' days that are expected to occur every week. The critical period to analyse is the peak day as that will highlight more issues to be considered than an off-peak day and the car parking rates for key land uses will be higher. As such, parking models were prepared for each town centre for the peak parking day only. Modelling the off-peak day is not considered necessary as the main output from the car parking model is a peak car parking rate for each land use, which can only be achieved by modelling the peak.

5.5.2 Modelling Car Parking Supply and Demand

The combination of car parking rates, temporal profile and land use data allows for the prediction of car parking demand for the town centres. This predicted demand should ideally match the surveyed car parking demand undertaken for each study area. The predicted demand represents the theoretical calculated car parking demand using typical car parking rates, existing land use data and the temporal distributions. However, in most instances, the predicted and actual demands will not match and a calibration process is necessary to allow for the determination of car parking rates which represent the specific operational characteristics of each town centre.

The base parking models for each town centre are presented in Figure 5.3 to Figure 5.14 with more detail provided in Appendix C.

Figure 5.3: Base Parking Model - Belfield

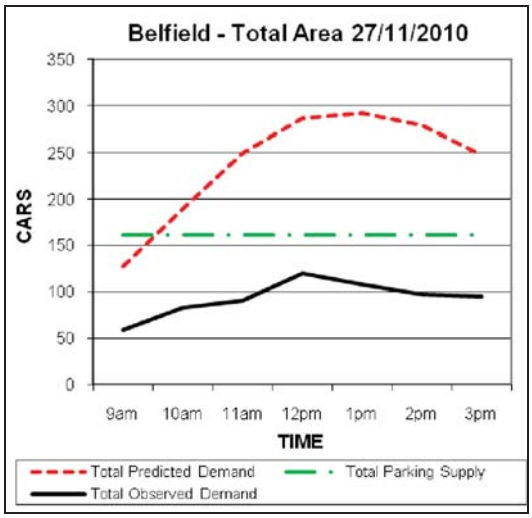


Figure 5.4: Base Parking Model - Belmore

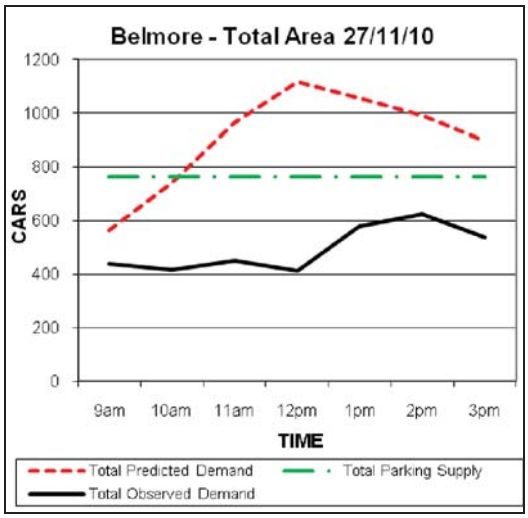


Figure 5.5: Base Parking Model - Campsie

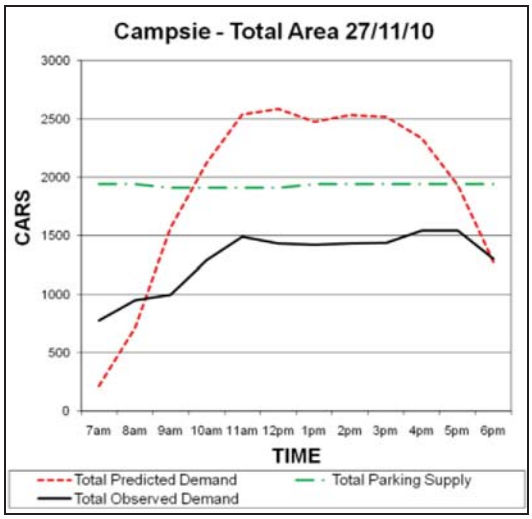


Figure 5.6: Base Parking Model - Canterbury

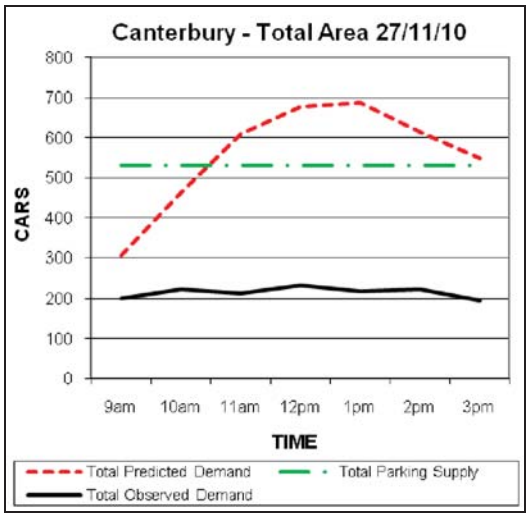


Figure 5.7: Base Parking Model – Croydon Park

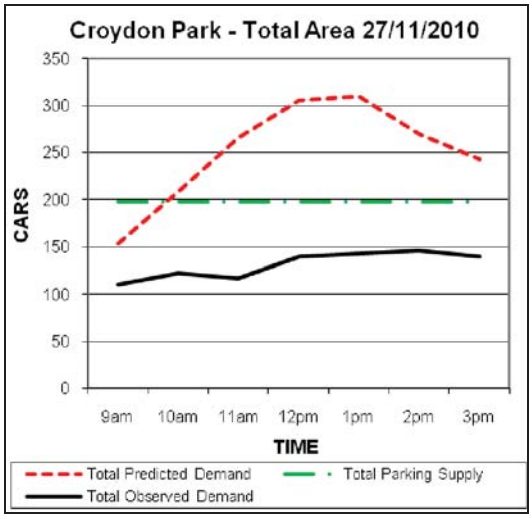


Figure 5.8: Base Parking Model - Earlwood

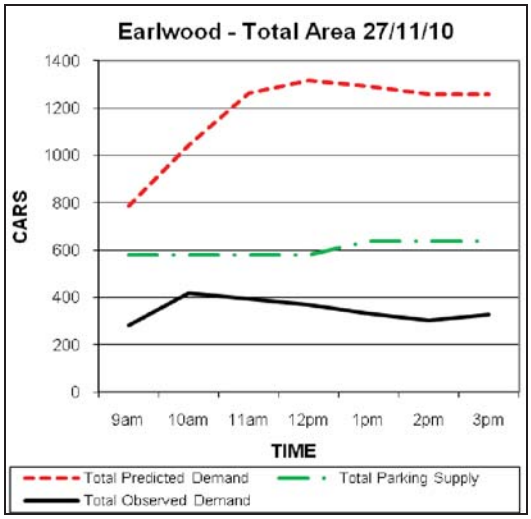


Figure 5.9: Base Parking Model – Hurlstone Park

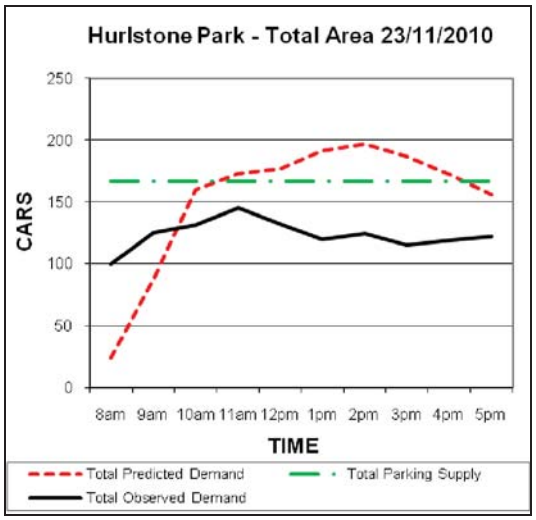


Figure 5.10: Base Parking Model - Lakemba

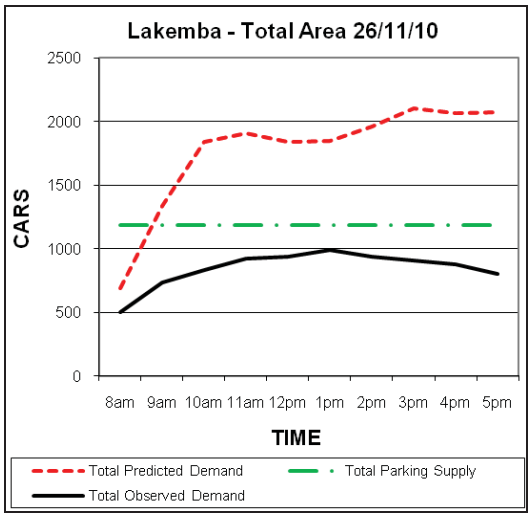


Figure 5.11: Base Parking Model - Narwee

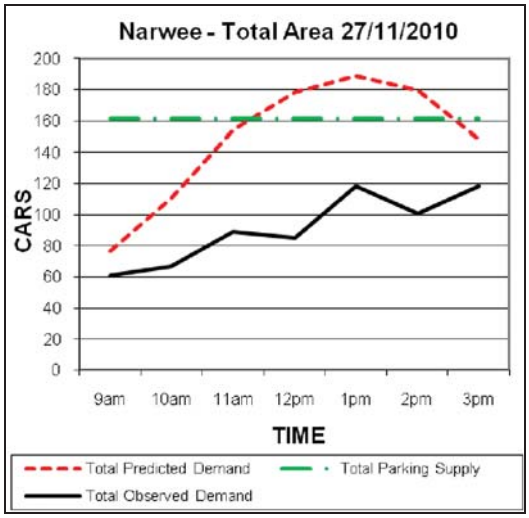


Figure 5.12: Base Parking Model – New Canterbury Road

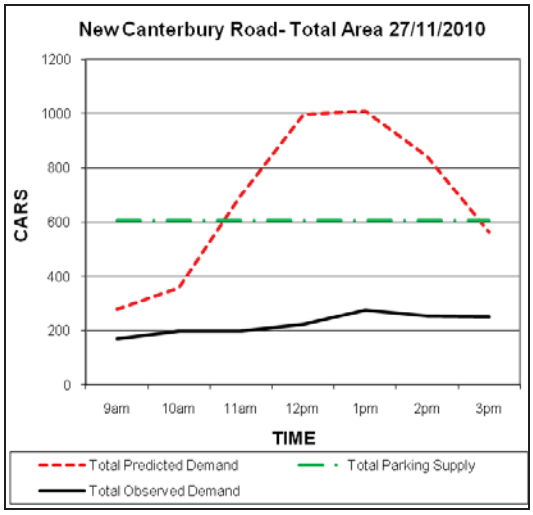


Figure 5.13: Base Parking Model - Punchbowl

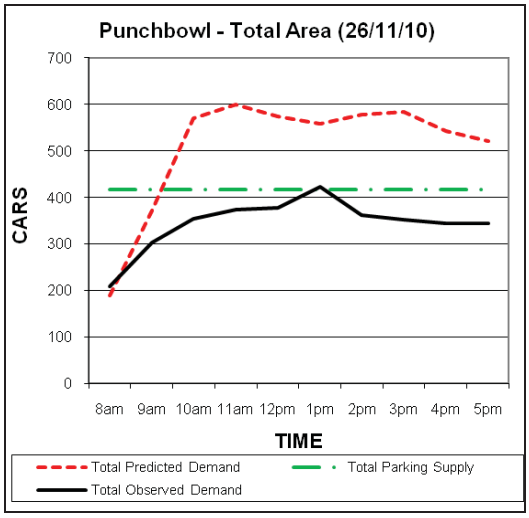


Figure 5.14: Base Parking Model – Wiley Park

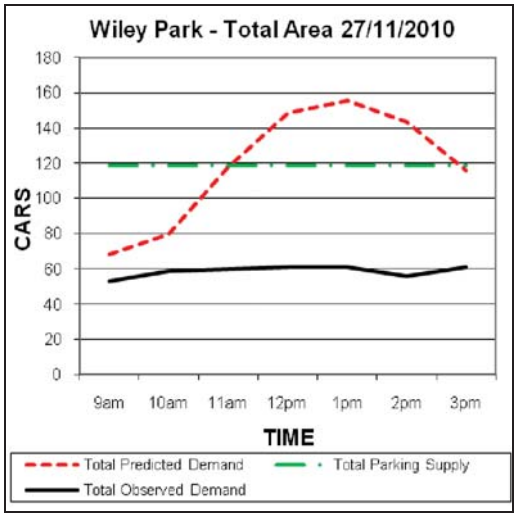


Figure 5.3 to Figure 5.14 indicate the following:

i the overall parking supply within each town centre
ii the observed parking demand based on actual parking surveys for each town centre
iii the modelled parking demand based on existing land use data, typical parking rates and temporal profiles.

The observed and modelled parking demand should ideally match however because one is assumed demand and the other a theoretical demand in most cases they do not match. The need to calibrate each model is expected as the base model utilises 'typical' information, such as council parking rates and temporal profiles. Once calibrated, each model will better represent the unique characteristics of each town centre. In order to determine the actual parking demand for each town centre, each parking model requires calibration.

5.5.3 Calibration of the Model

In calibrating the models, adjustments were made to the typical car parking rates and the temporal profiles. Where applicable, the adjusted car parking rates and temporal profiles were based on observed demands and profiles of off-street car parking facilities for businesses such as supermarkets and drive-in takeaway restaurants within each town centre. Operating hours were also used in adjusting the temporal profiles for uses such as Places of Worship and Medical Centres.

In cases where a car park was used for multiple uses, the temporal profile and parking rates were adjusted to reflect the observed demand in those car parks. These new rates would better reflect the specific operating conditions of each study area and are discussed within the following section.

The total parking model for each town centre has been calibrated to obtain a good fit of the predicted demands against the actual demands, particularly at the peak times. The calibrated models for each town centre are shown in Figure 5.15 to Figure 5.26. Full details of the calibrated models are shown in Appendix D.

Figure 5.15: Calibrated Parking Model - Belfield

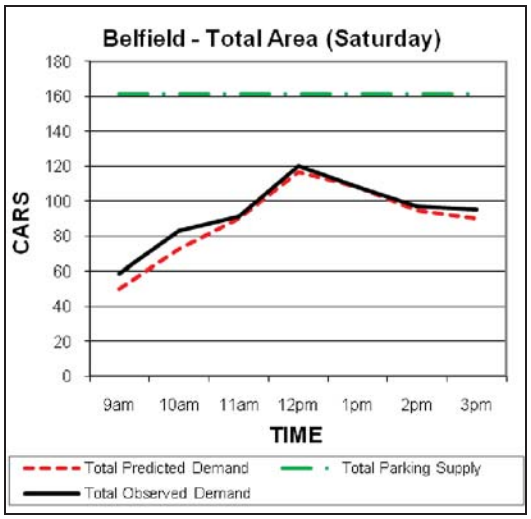


Figure 5.16: Calibrated Parking Model - Belmore

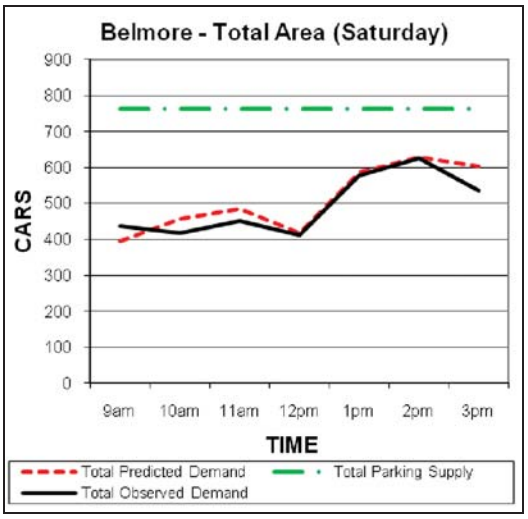


Figure 5.17: Calibrated Parking Model - Campsie

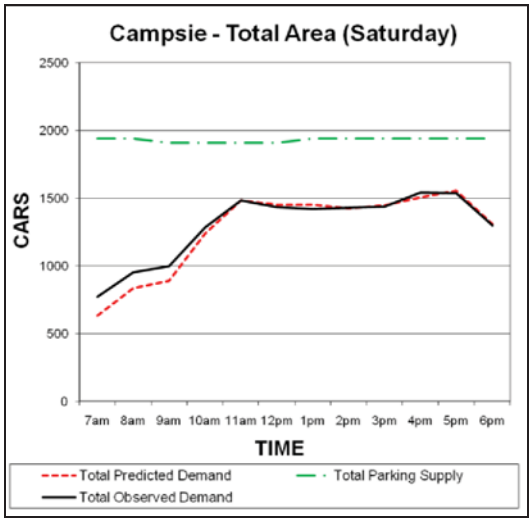


Figure 5.18: Calibrated Parking Model - Canterbury

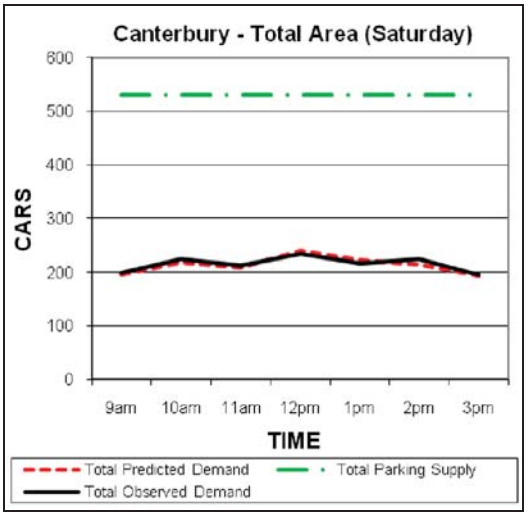


Figure 5.19: Calibrated Parking Model – Croydon Park

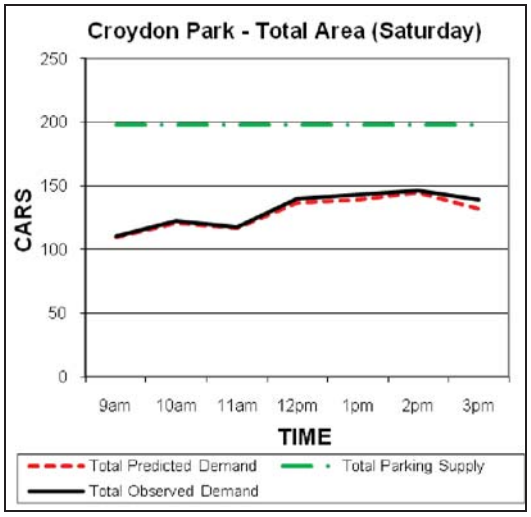


Figure 5.20: Calibrated Parking Model - Earlwood

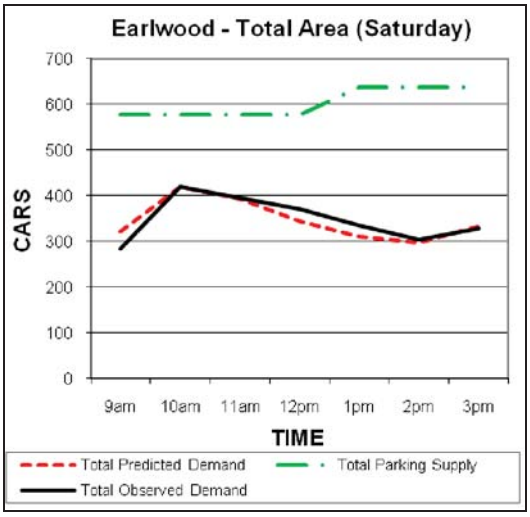


Figure 5.21: Calibrated Parking Model – Hurlstone Park

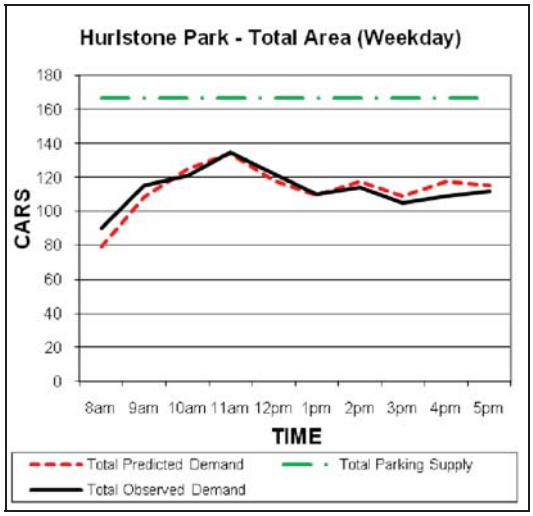


Figure 5.22: Calibrated Parking Model - Lakemba

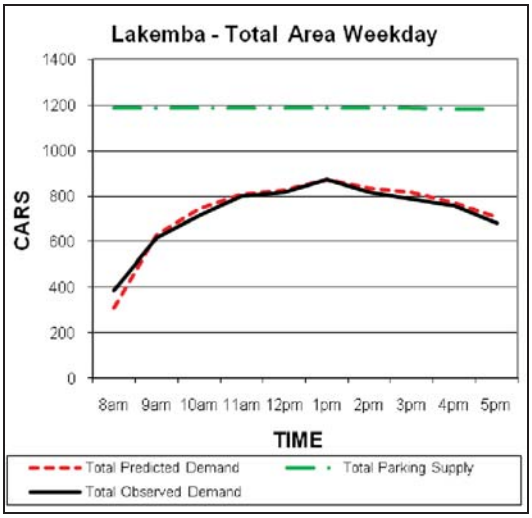


Figure 5.23: Calibrated Parking Model - Narwee

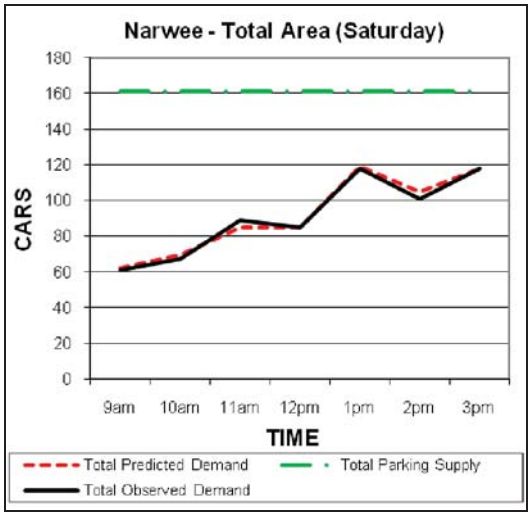


Figure 5.24: Calibrated Parking Model – New Canterbury Road

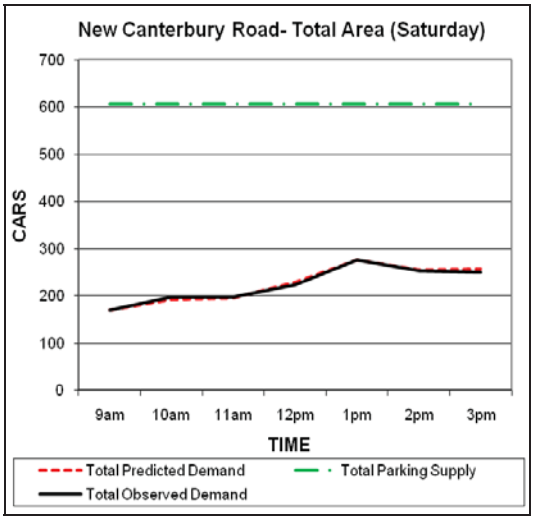


Figure 5.25: Calibrated Parking Model - Punchbowl

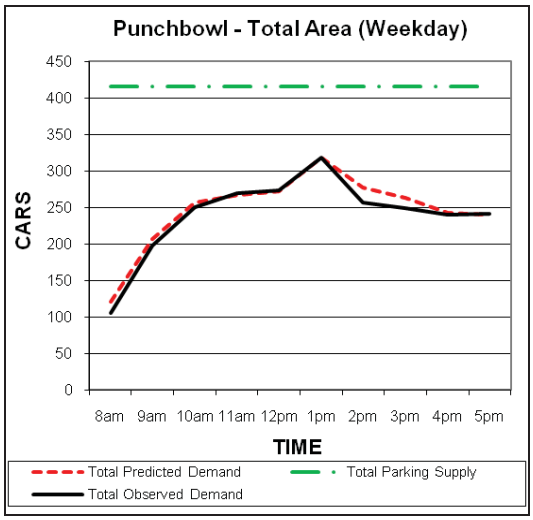
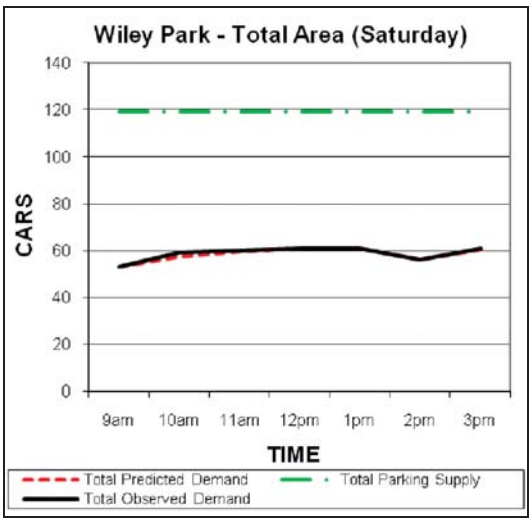


Figure 5.26: Calibrated Parking Model – Wiley Park



The calibrated parking models show that with the adjustments undertaken that the predicted parking demand now better represents the observed demand during the peak times.

5.6 Calibrated Car Parking Rates

As previously stated, the car parking surveys did not identify car parking on private property such as the spaces at the rear of shops and in office basements or where access was restricted. Therefore, the calibrated car parking rates will only be for the car parking spaces that are not on each site, which is the off-site car parking rate. In order to identify the total car parking rate an on-site component will have to be added. Once the car parking provision in private off-street spaces is included in the total, it is likely that the overall parking rate will be higher.

In order to reflect the overall parking rate, the off-site rates have been combined with on-site car parking rates for each land use. The estimation of the on-site car parking generation rates has been established through the analysis of aerial photos sourced through nearmap.com. On-site parking for uses not included in the parking survey, such as the Oporto car park in Earlwood, specifically for Oporto customers, were included in calculating the overall parking rates. The total amount of on-site car parking observed at the rear of properties, such as small retail shops and restaurants was distributed between the uses based on the overall land area for each land use and the number of properties per land use type.

The off-site rates extracted from each calibrated model have to be combined with the on-site car parking rate in order to realise the full calibrated car parking rate (encompassing both on-site and off-site parking) for each land use type within each centre. The combined on-site and off-site parking rates for key land uses are shown in Table 5.1.

A comparison has also been provided within Table 5.2 of the minimum and maximum car parking rates of the town centres against relevant industry standards, including: the City of Canterbury Development Control Plan No 20; the Roads and Traffic Authority (RTA) Guide to Traffic Generating Developments Version 2.2; and GTA Consultants Database.

Table 5.1: Combined Off-Site and On-Site Calibrated Car Parking Rates

Land Use	Measure	Belfield			Belmore			Campsie			Canterbury		
		Off	On	Total	Off	On	Total	Off	On	Total	Off	On	Total
Office (general)	Spaces / 100sqm GFA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retail shops (<120sqm)	Spaces / 100sqm GFA	1.3	0.8	2.1	0.9	1.3	2.2	1.5	1.0	2.5	1.0	0.7	1.7
Retail shops (120sqm to 1000sqm)	Spaces / 100sqm GFA	2.4	0.3	2.7	1.5	1.5	3.0	2.5	0.7	3.2	1.2	0.7	1.9
Retail shops (>1000sqm)	Spaces / 100sqm GFA	0.0	0.7	0.7				3.7	0.0	3.7	1.4	0.0	1.4
Hotel/Club	Spaces / 100sqm Public Floor Area	8.0	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0
Restaurant (<120sqm)	Spaces / 100sqm GFA	2.5	0.0	2.5	2.5	0.0	2.5	1.0	0.8	1.8	2.5	0.0	2.5
Restaurant (120sqm to 1000sqm)	Spaces / 100sqm GFA	2.3	0.3	2.6	3.3	0.0	3.3	1.3	1.0	2.3			
Restaurant - drive-through take-away	Spaces / Seat												
Child care centre	Spaces / Child				0.0	0.0	0.0	0.0	0.0	0.0			
Medical centre	Spaces / Room	2.0	0.0	2.0	1.5	0.5	2.0	2.0	0.0	2.0	2.0	0.0	2.0
Light industry	Spaces / 100sqm GFA	1.0	0.0	1.0	0.5	0.5	1.0	0.0	1.2	1.2	0.3	0.1	0.4
Service station	Spaces / 100sqm Retail Space	0.0	3.8	3.8									
Community facility	Spaces / 100sqm GFA	4.0	0.0	4.0	10.0	0.0	10.0	1.9	0.0	1.9			
Place of worship	Spaces / 100sqm GFA				6.6	0.0	6.6	6.6	0.0	6.6			
Entertainment facility	Spaces / 100sqm GFA				10.0	0.0	10.0	8.0	0.0	8.0			
Motel	Spaces / Room	0.1	0.0	0.1				0.1	0.0	0.1			
Educational establishment	Spaces / 100sqm GFA				2.0	0.0	2.0	2.0	0.0	2.0			
Recreational facility (gym)	Spaces / 100sqm GFA				1.5	0.0	1.5	7.5	0.0	7.5	7.5	0.0	7.5
Recreational facility (Bowling Green)	Spaces / Bowling Greens												
Primary School	Spaces / Enrolment												
Residential dwelling	Spaces / Dwellings												
Residential dwelling (visitor)	Spaces / Dwellings	0.12	0.00	0.12	0.12	0.00	0.12	0.12	0.00	0.12	0.12	0.00	0.12

Land Use	Measure	Croydon Park			Earlwood			Hurlstone Park			Lakemba		
		Off	On	Total	Off	On	Total	Off	On	Total	Off	On	Total
Office (general)	Spaces / 100sqm GFA	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.6	1.3	0.5	1.8
Retail shops (<120sqm)	Spaces / 100sqm GFA	1.4	0.9	2.3	1.0	0.5	1.5	1.6	0.2	1.8	1.5	0.5	2.0
Retail shops (120sqm to 1000sqm)	Spaces / 100sqm GFA	2.7	0.4	3.1	1.8	0.3	2.1	2.1	0.2	2.3	1.8	0.4	2.2
Retail shops (>1000sqm)	Spaces / 100sqm GFA				3.0	0.0	3.0				1.6	0.0	1.6
Hotel/Club	Spaces / 100sqm Public Floor Area	8.0	0.0	8.0	8.0	0.0	8.0				8.0	0.0	8.0
Restaurant (<120sqm)	Spaces / 100sqm GFA	1.4	1.1	2.5	2.0	0.6	2.6	2.5	0.0	2.5	1.4	0.5	1.9
Restaurant (120sqm to 1000sqm)	Spaces / 100sqm GFA	2.1	0.4	2.5	3.0	0.4	3.4				2.0	0.5	2.5
Restaurant - drive-through take-away	Spaces / Seat	0.2	0.0	0.2	0.2	0.1	0.3						
Child care centre	Spaces / Child	0.0	0.0	0.0							0.2	0.0	0.2
Medical centre	Spaces / Room	2.0	0.0	2.0	1.0	0.1	1.1	2.0	0.0	2.0	2.0	0.0	2.0
Light industry	Spaces / 100sqm GFA	0.3	0.7	1.0							1.0	0.0	1.0
Service station	Spaces / 100sqm Retail Space	1.7	0.0	1.7	0.0	3.4	3.4				5.0	0.0	5.0
Community facility	Spaces / 100sqm GFA				1.9	0.0	1.9				2.5	2.4	4.9
Place of worship	Spaces / 100sqm GFA	6.6	0.0	6.6	1.0	0.0	1.0				6.6	0.0	6.6
Entertainment facility	Spaces / 100sqm GFA				10.0	0.0	10.0						
Motel	Spaces / Room	0.1	0.0	0.1							0.0	0.1	0.1
Educational establishment	Spaces / 100sqm GFA				2.0	0.0	2.0				2.0	0.0	2.0
Recreational facility (gym)	Spaces / 100sqm GFA				7.5	0.0	7.5				5.5	0.0	5.5
Recreational facility (Bowling Green)	Spaces / Bowling Greens							26.5	0.0	26.5			
Primary School	Spaces / Enrolment				0.0	0.0	0.0				0.070	0.014	0.084
Residential dwelling	Spaces / Dwellings							0.28	0.00	0.28			
Residential dwelling (visitor)	Spaces / Dwellings	0.12	0.00	0.12	0.12	0.00	0.12	0.06	0.00	0.06	0.06	0.00	0.06

Land Use	Measure	Narwee			New Canterbury Road			Punchbowl			Wiley Park		
		Off	On	Total	Off	On	Total	Off	On	Total	Off	On	Total
Office (general)	Spaces / 100sqm GFA	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.5	1.7	0.0	0.0	0.0
Retail shops (<120sqm)	Spaces / 100sqm GFA	1.5	0.5	2.0	1.3	0.3	1.6	1.2	0.4	1.6	1.8	0.0	1.8
Retail shops (120sqm to 1000sqm)	Spaces / 100sqm GFA	2.4	0.2	2.6	1.8	0.3	2.1	0.8	1.3	2.1	2.3	0.0	2.3
Retail shops (>1000sqm)	Spaces / 100sqm GFA												
Hotel/Club	Spaces / 100sqm Public Floor Area	16.0	0.0	16.0	8.0	0.0	8.0	8.0	0.0	8.0	2.0	3.7	5.7
Restaurant (<120sqm)	Spaces / 100sqm GFA	2.5	0.0	2.5	2.5	0.0	2.5	2.0	0.5	2.5			
Restaurant (120sqm to 1000sqm)	Spaces / 100sqm GFA	3.3	0.0	3.3	3.3	0.0	3.3	2.9	0.3	3.2			
Restaurant - drive-through take-away	Spaces / Seat												
Child care centre	Spaces / Child				0.0	0.0	0.0						
Medical centre	Spaces / Room	1.5	0.6	2.1	0.5	1.7	2.2	2.0	0.0	2.0	0.0	1.7	1.7
Light industry	Spaces / 100sqm GFA	1.0	0.0	1.0	0.3	0.4	0.7						
Service station	Spaces / 100sqm Retail Space	0.0	3.7	3.7	5.0	0.0	5.0						
Community facility	Spaces / 100sqm GFA				10.0	0.0	10.0	5.0	0.0	5.0			
Place of worship	Spaces / 100sqm GFA				6.6	0.0	6.6	6.6	0.0	6.6			
Entertainment facility	Spaces / 100sqm GFA							10.0	0.0	10.0			
Motel	Spaces / Room	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Educational establishment	Spaces / 100sqm GFA	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0			
Recreational facility (gym)	Spaces / 100sqm GFA				7.5	0.0	7.5	7.5	0.0	7.5			
Recreational facility (Bowling Green)	Spaces / Bowling Greens												
Primary School	Spaces / Enrolment				0.0	0.0	0.0						
Residential dwelling	Spaces / Dwellings												
Residential dwelling (visitor)	Spaces / Dwellings	0.12	0.00	0.12	0.12	0.00	0.12	0.06	0.00	0.06	0.12	0.00	0.12

Shaded – Indicated Land Uses not within Town Centre

Table 5.2: Comparison of Total Calibrated Car Parking Rates

Land Use	Calibrated Car Parking Rate (minimum for all town centres)	Calibrated Car Parking Rate (maximum for all town centres)	City of Canterbury DCP	RTA Guide to Traffic Engineering Developments	GTA Database Rate
Office (general)	1.60 spaces / 100sqm GFA	1.77 spaces / 100sqm GFA [4]	2.50 spaces / 100sqm GFA	2.50 spaces / 100sqm GFA	2.82 spaces / 100sqm GFA
Retail shops (<120sqm GFA)	1.47 spaces / 100sqm GFA	2.51 spaces / 100sqm GFA	2.50 spaces / 100sqm GFA	Not Specified	Not Specified
Retail shops (120sqm GFA to 1000sqm GFA)	1.94 spaces / 100sqm GFA	3.23 spaces / 100sqm GFA	3.33 spaces / 100sqm GFA	Not Specified	Not Specified
Retail shops (>1000sqm GFA)	0.73 spaces / 100sqm GFA	3.70 spaces / 100sqm GFA	4.55 spaces / 100sqm GFA	Not Specified	3.06 spaces / 100sqm GFA
Hotel/Club	5.72 spaces / 100sqm GFA of public floor area	16.00 spaces / 100sqm GFA of public floor area	25.00 spaces / 100sqm GFA of public floor area	Not Specified	5.51 spaces/ 100sqm GFA
Restaurant (<120sqm GFA)	1.77 spaces / 100sqm GFA	2.65 spaces / 100sqm GFA	2.50 spaces / 100sqm GFA	Greater of 15 spaces / 100sqm or 1 space / 3 seats	9.82 spaces / 100sqm GFA
Restaurant (120sqm GFA to 1000sqm GFA)	2.29 spaces / 100sqm GFA	3.41 spaces / 100sqm GFA	3.33 spaces / 100sqm GFA	Greater of 15 spaces / 100sqm or 1 space / 3 seats	10.10 spaces / 100sqm GFA
Restaurant - drive-through take-away	0.15 spaces / seat	0.29 spaces / seat	0.33 spaces / seat	0.33 spaces / seat	0.29 spaces / seat
Child care centre	0.20 spaces / child	0.20 spaces / child	0.20 spaces / child	0.25 spaces / child	0.19 spaces / child
Medical centre	1.09 spaces / room	2.24 spaces / room	2.00 spaces / room	Not Specified	4.65 spaces / 100sqm GFA
Light industry	0.39 spaces / 100sqm GFA	1.17 spaces / 100sqm GFA	1.00 spaces / 100sqm GFA	0.43 spaces / 100sqm GFA	0.73 spaces / 100sqm GFA
Service station	1.70 spaces / 100sqm GFA of retail space	5.00 spaces / 100sqm GFA of retail space	5.00 spaces / 100sqm GFA of retail space	5.00 spaces / 100sqm GFA of retail space	9.00 spaces / shop

Land Use	Calibrated Car Parking Rate (Minimum)	Calibrated Car Parking Rate (Maximum)	City of Canterbury DCP	RTA Guide to Traffic Engineering Developments	GTA Database Rate
Community facility	1.92 spaces / 100sqm GFA	10.00 spaces / 100sqm GFA	Not Specified	Not Specified	1.63 spaces / 100sqm GFA
Place of worship	1.00 spaces / 100sqm GFA	6.60 spaces / 100sqm GFA	6.60 spaces / 100sqm GFA	Not Specified	0.42 spaces / person; 11.78 spaces / 100sqm GFA
Entertainment facility	8.00 spaces / 100sqm GFA	10.00 spaces / 100sqm GFA	Not Specified	Not Specified	0.39 spaces / patron; 10.94 spaces / 100sqm GFA
Motel	0.07 spaces / room	0.07 spaces / room	1.00 spaces / room	1.00 spaces / room	0.74 spaces / room
Educational establishment	2.00 spaces / 100sqm GFA	2.00 spaces / 100sqm GFA	Not Specified	Not Specified	0.48 spaces / student 28.61 spaces / 100sqm GFA [1]
Recreational facility (gym)	1.50 spaces / 100sqm GFA	7.50 spaces / 100sqm GFA	7.50 spaces / 100sqm GFA	7.50 spaces / 100sqm GFA	4.31 spaces / 100sqm GFA
Recreational facility (Bowling Green)	26.50 spaces / bowling green	26.50 spaces / bowling green	Not Specified	30 spaces for first bowling green + 15 spaces for each additional bowling green	26.50 spaces / bowling green
Primary School	0.08 spaces per enrolment	0.08 spaces / enrolment	Not Specified	Not Specified	0.25 spaces/ enrolment
Residential dwelling	0.00 spaces per dwelling	0.28 spaces per dwelling [2]	2.00 spaces per dwelling [3]	1.00 – 2.00 spaces per dwelling	0.99 spaces / dwelling [2]
Residential dwelling (visitor)	0.06 spaces / dwelling (Weekday)	0.12 spaces / dwelling (Weekend)	0.20 spaces / dwelling	0.20 spaces /dwelling	0.06 spaces / dwelling (Weekday); 0.12 spaces / dwelling (Weekend)

[1] Based on a rate of 58 seats per 100sq
[2] Off-Site Parking only
[3] Single Unit Dwelling House
[4] Office was not calibrated for all centres as the peak day for many centres was a Saturday

Table 5.2 illustrates that for many of the key land use types, such as retail shops, office and restaurants, the parking rates determined from the study are lower than those within the existing Council DCP and the RTA Guide to Traffic Generating Developments. The parking rates determined from the study reflect the existing parking conditions within each town centre and provide a better indication of the level at which future parking should be provided.

5.7 Interpretation of the Models

Due to their size and to provide a better understanding of how the centres operate, Campsie and Belmore have been divided into two precincts. In both cases, Precinct 1 is north of the railway line and Precinct 2 is south of the railway line. The breakup of the two town centres into smaller precincts allows for a greater understanding of the parking characteristics affecting different sections of each study area. Commentary on the two town centres and their individual precincts are discussed in the following sections.

5.7.1 Belmore

The total calibrated car parking model of the total study area of Belmore is shown in Figure 5.27.

Figure 5.27: Belmore – Calibrated Parking Model

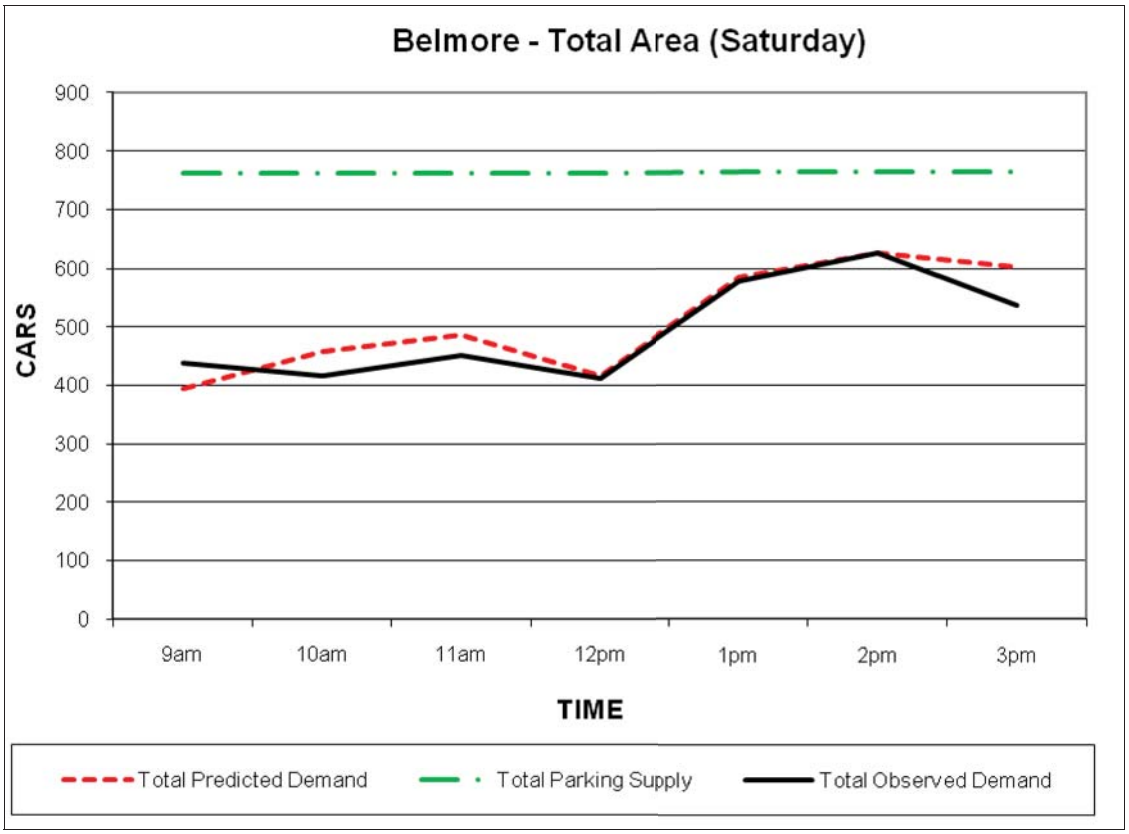


Figure 5.27 highlights the parking supply and demand for the total study area.

Figure 5.28 and Figure 5.29 presents the calibrated models for Precinct 1 and Precinct 2. Precinct 1 represents the study area north of the railway line, and Precinct 2 represents the study area south of the railway line.

Figure 5.28: Belmore Precinct 1 – Calibrated Parking Model

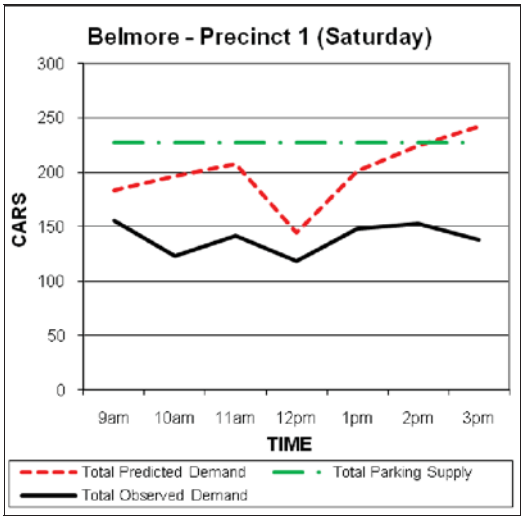


Figure 5.29: Belmore Precinct 2 – Calibrated Parking Model

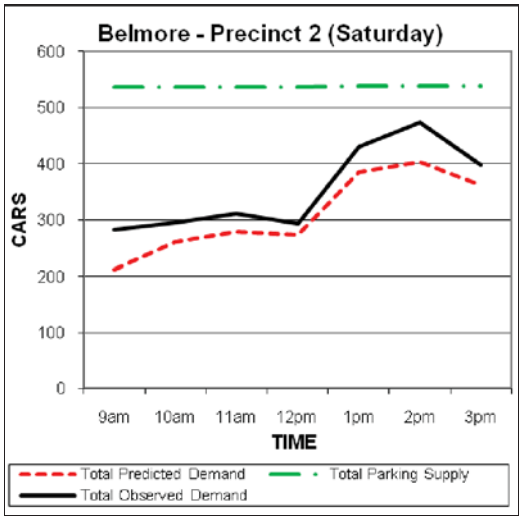


Figure 5.28 illustrates that the peak observed demand in Precinct 1 occurred at 9:00am with the afternoon peaks at 1:00pm and 2:00pm. The observed demand profile is relatively flat throughout the study period with observed demand in the range from 118 to 155. Based on the predicted demand, which is produced from the land use, car parking rates and temporal profile, the demand should theoretically be higher than that observed and peak at 3:00pm.

Figure 5.29 illustrates a peak which occurs at 2:00pm. Precinct 2 also has the greater influence to the total study area as a result of offering approximately 70% of the parking supply within the town centre. In contrast to Precinct 1, the predicted demand is lower than the observed demand however the demand profile is similar to the observed profile which is not the case for Precinct 1.

The higher predicted than observed demand in Precinct 1 and vice versa for Precinct 2 is possibly due to the parking supply in Precinct 2 supporting the uses in Precinct 1.

The Bulldogs League Club car parking area was excluded from all calculations as it was considered self sufficient and outside the scope of the project.

5.7.2 Campsie

Figure 5.30 presents the calibrated car parking model of the total study area of Campsie.

Figure 5.31 and Figure 5.32 presents the calibrated models for Precinct 1 and Precinct 2. Precinct 1 represents the study area north of the railway; and Precinct 2 represents the study area south of the railway.

Precinct 2 offers approximately 67% of the parking supply within the town centre with approximately 46 % of the supply in the Campsie Centre. Therefore, the total parking model is greatly influenced by Precinct 2 which is evident with the similarity in the demand profile.

Figure 5.30: Campsie – Calibrated Parking Model

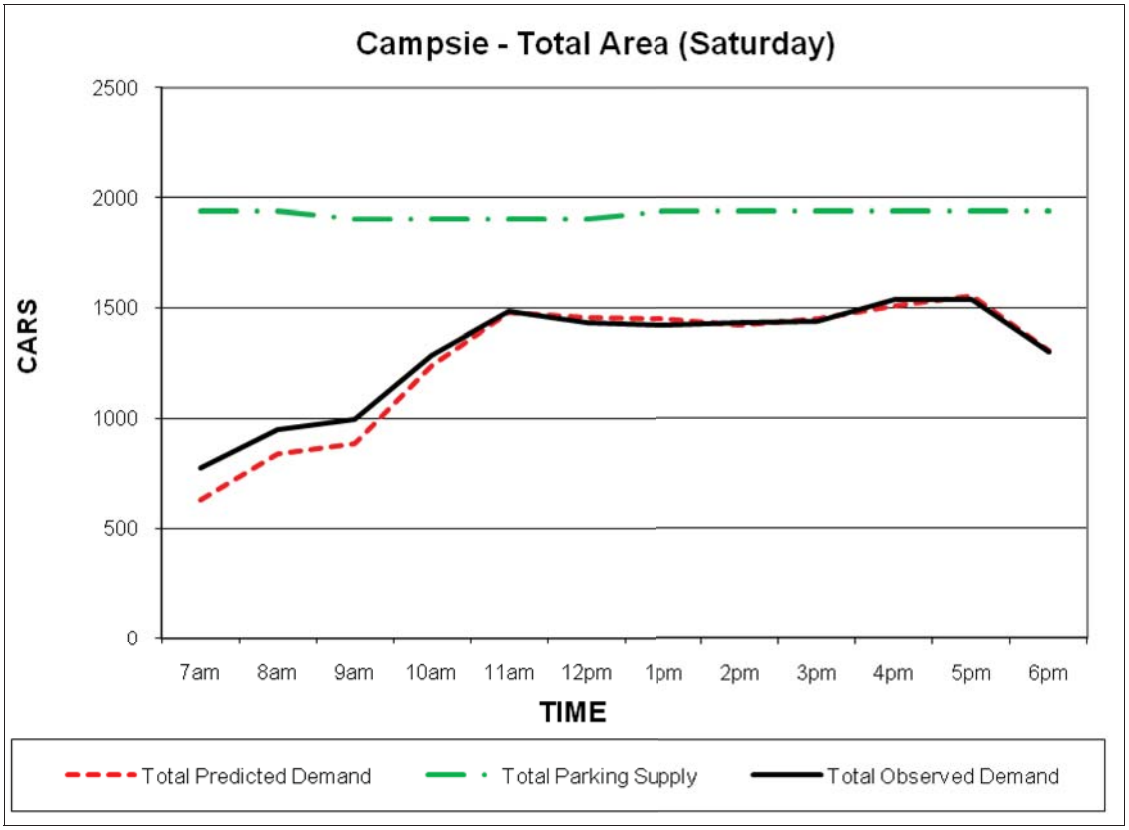


Figure 5.31: Campsie Precinct 1– Calibrated Parking Model

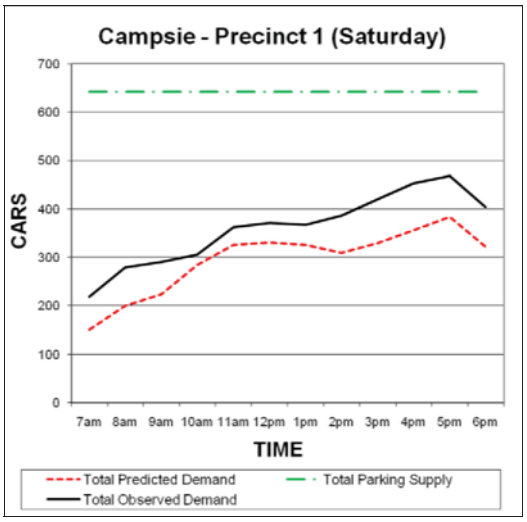


Figure 5.32: Campsie Precinct 2 – Calibrated Parking Model

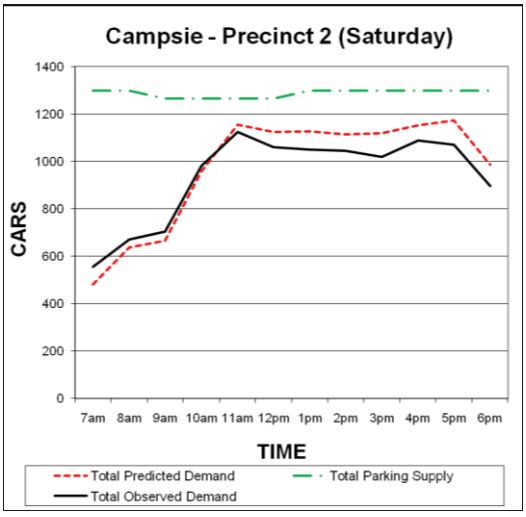


Figure 5.31 demonstrates that there is a higher observed than predicted demand. Figure 5.32 however illustrates that the predicted demand is higher than the observed demand. As with Belmore, a possible explanation is the result of the parking facilities in Precinct 2 supporting the uses in Precinct 1.

5.7.3 Staff Parking versus Customer Parking

In addition to the above, an estimate has been made of the staff and customer components of the car parking demand. In this respect Table 5.3 shows the ratios that have been adopted for key uses.

Table 5.3: Staff / Customer Parking Proportions

Land Use	Staff Parking	Customer / Visitor Parking
Professional [1]	90%	10%
Retail [2]	20%	80%
School [3]	25%	75%
Other Uses [4]	50%	50%

[1] Based on data from Inner Municipalities Parking Study, Andrew O'Brien and Associates, 1991. Includes Factory and Office uses
[2] Based on typically industry accepted rate adopted for other studies. Includes Bank, Café, Car Sales, Convenience Restaurant, Gambling, Pub, Restaurant, Restricted Retail, Shop and Supermarket
[3] GTA Consultants assumption based on likely staff to student ratios
[4] GTA Consultants assumption, includes Church, Clinic, Community Health, Minor Sports and Recreation and Place of Assembly

The predicted car parking demands relating to short term and long term users in Table 5.3 have been extracted from the calibrated car parking models (Appendix D) and compared at the peak times for each centre. Table 5.4 compares the modelled short-term and long-term demand against the supply of long term and short term parking spaces within each study area.

It is noted that Canterbury DCP 20 states that visitor parking for office premises is 10% of the total parking demand. This is the same as the proportion determined by GTA Consultants. Visitor parking for retail premises is 25% of the total parking demand. However this excludes local shops and for this reason GTA Consultants have adopted 20% for the purpose of this assessment.

Table 5.4: Long Term / Short Term Parking

Town Centre (Peak Hour)	Car Parking User [1]	Parking Supply (spaces)	Estimated Demand (spaces) [2]	Surplus (+) / Deficiency (-) (spaces)
Belfield (12pm-Saturday)	Long Term Car Parking (Staff)	90 [3]	28	+62
	Short Term Car Parking (Customer / Visitor)	71	89	-18
	Total	**161**	**117**	**+44**
Belmore (2pm-Saturday)	Long Term Car Parking (Staff)	528 [3]	191	+337
	Short Term Car Parking (Customer / Visitor)	198	423	-225
	Total	**726**	**627**	**+99**
Campsie (5pm-Saturday)	Long Term Car Parking (Staff)	1,285 [3]	329	+956
	Short Term Car Parking (Customer / Visitor)	566	1,227	-661
	Total	**1,851**	**1,556**	**+295**
Canterbury (12pm-Saturday)	Long Term Car Parking (Staff)	423 [3]	74	+349
	Short Term Car Parking (Customer / Visitor)	53	165	-112
	Total	**476**	**239**	**+237**
Croydon Park (2pm-Saturday)	Long Term Car Parking (Staff))	122 [3]	40	+82
	Short Term Car Parking (Customer / Visitor)	76	105	-29
	Total	**198**	**145**	**+53**
Earlwood (10am-Saturday)	Long Term Car Parking (Staff)	331 [3]	95	+236
	Short Term Car Parking (Customer / Visitor)	185	324	-139
	Total	**516**	**419**	**+97**
Hurlstone Park (11am-Tuesday)	Long Term Car Parking (Staff / Residential)	114 [3]	74	+40
	Short Term Car Parking (Customer / Visitor)	52	35	+17
	Total	**166**	**109**	**+57**
Lakemba (1pm-Friday)	Long Term Car Parking (Staff)	716 [3]	386	+320
	Short Term Car Parking (Customer / Visitor)	398	489	-91
	Total	**1,114**	**875**	**+239**
Narwee (1pm-Saturday)	Long Term Car Parking (Staff)	89 [3]	26	+63
	Short Term Car Parking (Customer / Visitor)	72	94	-22
	Total	**161**	**119**	**+42**
New Canterbury Road (1pm-Saturday)	Long Term Car Parking (Staff)	576 [3]	59	+517
	Short Term Car Parking (Customer / Visitor)	31	216	-185
	Total	**607**	**275**	**+332**
Punchbowl (1pm-Friday)	Long Term Car Parking (Staff)	241 [3]	137	+104
	Short Term Car Parking (Customer / Visitor)	173	182	-9
	Total	**414**	**318**	**+96**
Wiley Park (1pm-Saturday)	Long Term Car Parking (Staff)	73[3][4]	11	+62
	Short Term Car Parking (Customer / Visitor)	16	50	-34
	Total	**89**	**61**	**+28**

[1] Includes spaces on Private Property. Excludes Taxi, Mail and Loading Zones.
[2] Estimated Demands for long term and short term parking have been extracted from the calibrated car parking model and adopting the typical long term and short term parking splits as shown in Table 5.3
[3] May include unrestricted on-street parking in residential areas.
[4] Excluding Car Park which has since been closed

Table 5.4 indicates that all 12 town centres, with the exception of Hurlstone Park, have a shortfall of short-term car parking with sufficient long-term car parking across all centres.

The data shows that in all town centres there is a higher supply of long-term parking than the predicted demand. As the inventory and car parking demand data only accounted for publicly available spaces, private non-residential parking adds to the long-term parking supply available in the town centres. Supply of short-term parking is noticeably low compared to the predicted demand. This could indicate that there is short-term parking occurring in long-term spaces and therefore, there is a potential to convert long-term spaces to short-term to cater for the demand. Specific recommendations regarding conversion of car parking spaces are set out in Section 7.3.2.

6. Future Car Parking Models

An assessment of the likely future parking conditions in the Canterbury LGA has been undertaken based on future development proposed for the area in the next 10 years in order to better understand where increases in car parking would need to be provided.

6.1 Future Land Use

A summary of the likely increases in floor area for each town centre for the next 10 years and their location was provided by the City of Canterbury. The increased floor area was based on current development applications as well as potential sites likely to be redeveloped over a 10 year period. A summary of the likely increases in Gross Floor Area (GFA) and the number of sites likely to be redeveloped are provided in Table 6.1.

Table 6.1: 10-year Growth Potential – Additional Development

Town Centre	Expected Future Sites	Office	Retail shops (<120sqm)	Retail shops (120 sqm to 1000 sqm)	Retail shops (>1000 sqm)	Restaurant (<120 sqm)	Restaurant (120 sqm to 1000 sqm)	Restaurant (>1000 sqm)	Medical Centre	Recreational facility	Residential dwellings (units)
Belfield	2-3 sites	50	100			50					40
Belmore Precinct 1	1 site	150		500							30
Belmore Precinct 2	1-2 sites			1,700			150				70
Belmore	2-3 sites	150		2,200			150				100
Campsie Precinct 1	3 sites		500	750							360
Campsie Precinct 2	2 sites			750							45
Campsie	6 sites		500	1,500							405
Canterbury	4-5 sites	1,000	1,000	4,000	3,000		3,000		1,600		1,100
Croydon Park	1 site		100								15
Earlwood	3-5 sites	100		400		100					70
Hurlstone Park	1? site		100								12
Lakemba	2-4 sites			1,500							150
Narwee	1-2 sites			200		100					60
New Canterbury Road	3 sites	50		250		100					80
Punchbowl	1-2 sites			500							150
Wiley Park	1? site		100			100					60

Table 6.1 illustrates that the key development 'hot spots' would be Campsie and Canterbury town centres. The light industrial areas north and south of the railway line in Canterbury are also proposed to be converted to mixed-use developments which will boost the residential, retail and office space within this town centre.

The other key town centres that are projected to receive considerable future development are Lakemba and Punchbowl.

Most of the redevelopment is focused on office and retail shop uses (120sqm GFA - 1000sqm GFA) which together account for approximately 30% each for the total future development within the Canterbury LGA.

6.2 Future Models

Based on the future floor areas summarised in Table 6.1, the future parking demands have been modelled by incorporating them into the calibrated car parking model.

Due to the high retail vacancy rate at the time of the surveys in Hurlstone Park and Narwee (25% and 14% respectively), the total floor area of vacant space has been reduced by 10 % of the total floor area within the town centre to reflect the likely occupancy in 10 years. The converted vacant area was included as retail shop (120sqm GFA – 1000sqm GFA). The Future Parking Models are presented in Figure 6.1 to Figure 6.14, with the full results provided in Appendix E.

Due to the future office development in Campsie and Canterbury, the weekday and Saturday scenario have been modelled for these town centres which are shown in Figure 6.3 to Figure 6.5 respectively.

Figure 6.1: Future Parking Model – Belfield

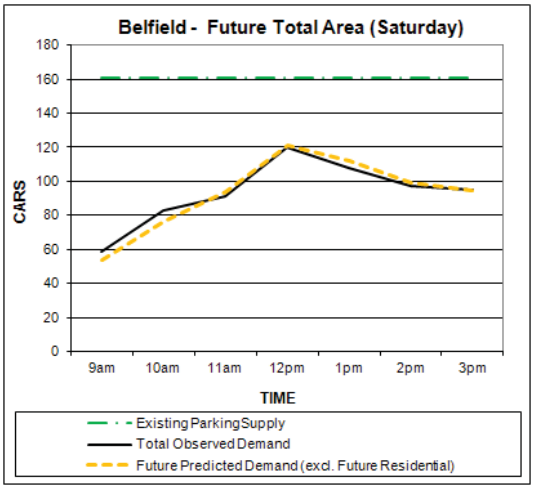


Figure 6.2: Future Parking Model – Belmore

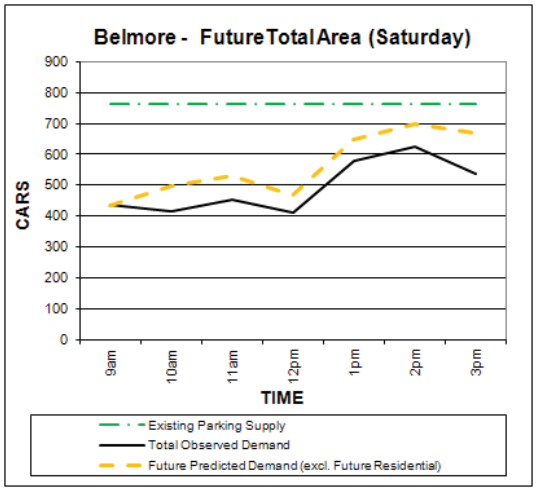


Figure 6.3: Future Parking Model – Campsie

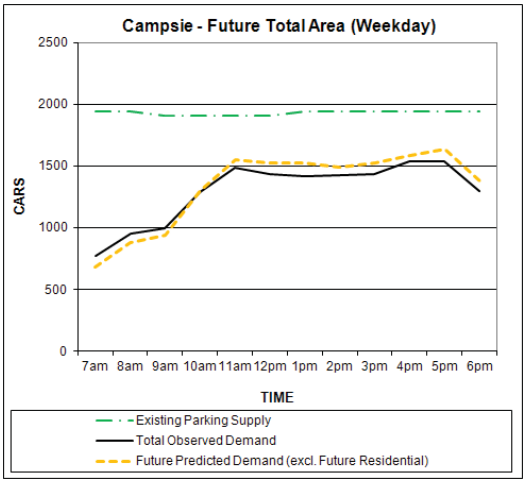


Figure 6.4: Future Parking Model – Campsie

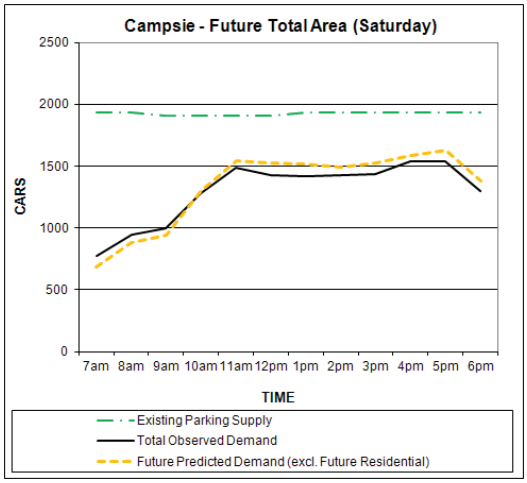


Figure 6.5: Future Parking Model – Canterbury

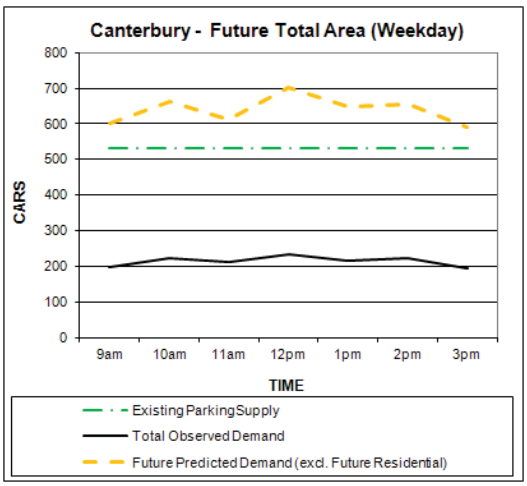


Figure 6.6: Future Parking Model – Canterbury

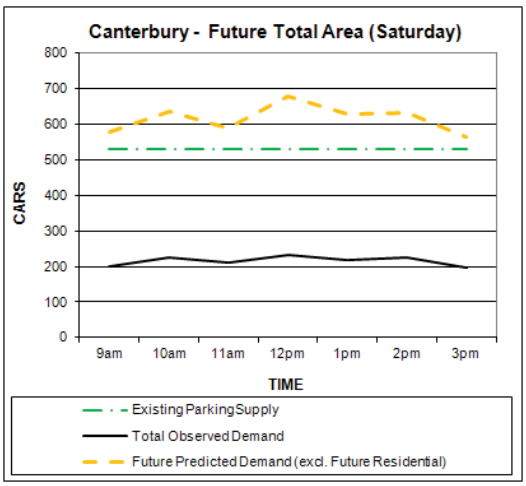


Figure 6.7: Future Parking Model – Croydon Park

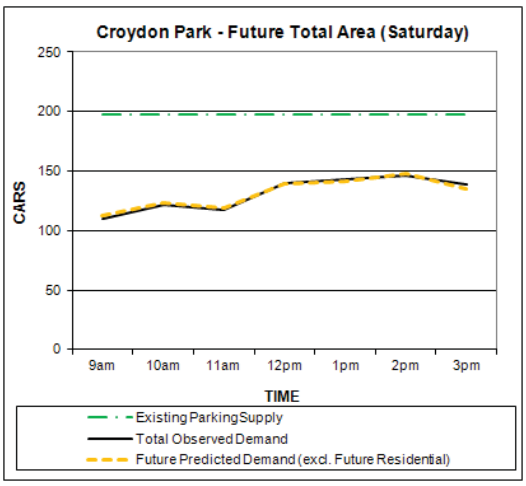


Figure 6.8: Future Parking Model – Earlwood

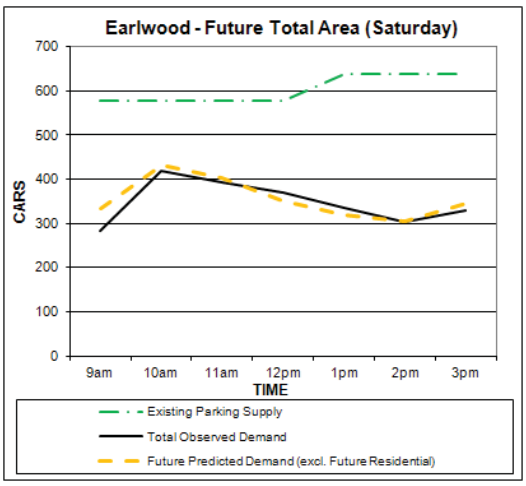


Figure 6.9: Future Parking Model – Hurlstone Park

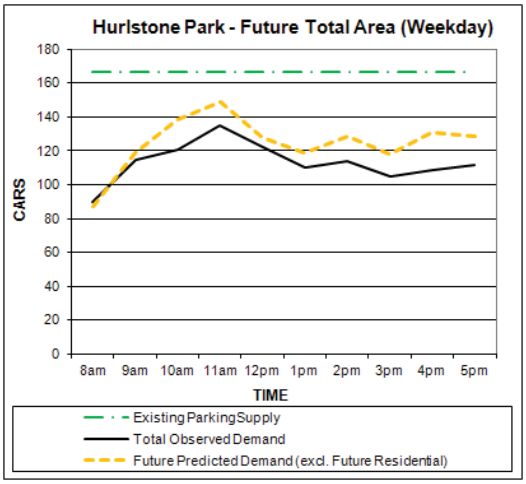


Figure 6.10: Future Parking Model – Lakemba

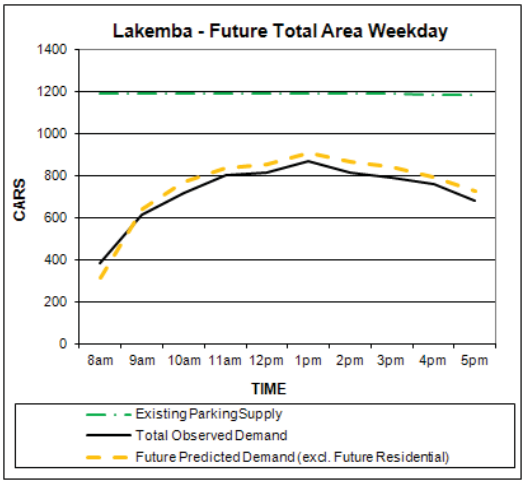


Figure 6.11: Future Parking Model – Narwee

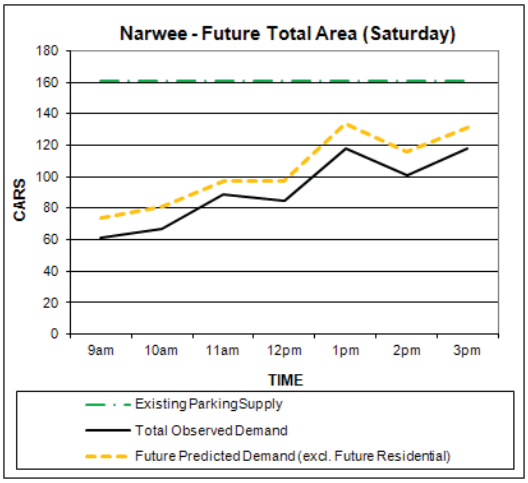


Figure 6.12: Future Parking Model – New Canterbury Road

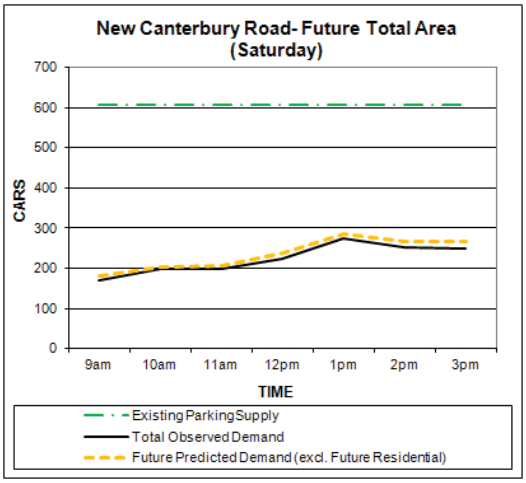


Figure 6.13: Future Parking Model – Punchbowl

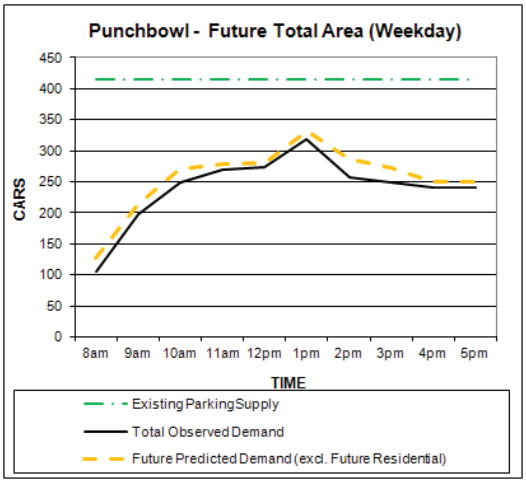


Figure 6.14: Future Parking Model – Wiley Park

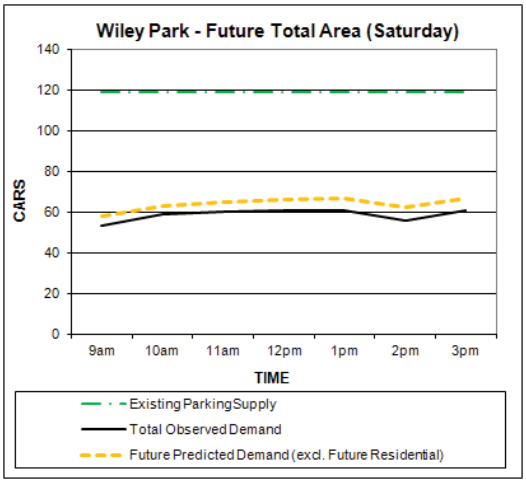


Figure 6.1 to Figure 6.14 indicate the following:

- Existing Parking Supply
- Total Observed Demand
- Future Predicted Demand – based on likely redevelopment area increases
- Future Predicted Demand (excluding Future Residential) – As it is assumed on-site parking will be provided for residential dwellings.

6.3 Future Parking Requirements

By comparing the predicted peak future car parking demand with the existing peak car parking demand occurring within each centre, allows the expected amount of additional car parking required to support the future development to be determined.

At a broad level we can identify the total number of additional spaces required however a more accurate assessment involves comparing the expected future short-term and long-term parking spaces with the current availability of those public spaces in each area. It is important to identify the publically available spaces to ensure we are not relying on existing spaces on private property.

Typically, parking utilisation greater than 85%[1] represents a situation where drivers are unable to identify where vacant spaces exist and subsequently represents effective capacity. As such, there is a need to ensure that the anticipated parking demand, only reaches a level of approximately 85% of available supply within each area.

Based on the theoretical future parking demand and the existing parking supply, Table 6.2 presents the expected future requirements for parking within each town centre.

Provision of additional car parking in the Canterbury town centre has not been included in Table 6.2 and although the indicative development floor areas are included, no recommendation is made for future car parking. The anticipated development floor areas, as part of the redevelopment of the Campsie Civic Centre and the Punchbowl RSL site redevelopment, have also been excluded from consideration as planning for these sites is well advanced and the development sites will be self-contained in terms of car parking.

[1] Donald Shoup, *The Price of Parking on a Great Street*, Parking World, February 2009

Table 6.2: Future Parking Requirements

Town Centre	Belfield (Sat)	Belmore Precinct 1 (Sat)	Belmore Precinct 2 (Sat)	Campsie Precinct 1 (Weekday)	Campsie Precinct 2 (Weekday)	Canterbury (Weekday)	Croydon Park (Sat)	Earlwood (Sat)	Hurlstone Park (Sat)	Lakemba (Sat)	Narwee (Sat)	New Canterbury Road (Sat)	Punchbowl (Sat)	Wiley Park (Sat)
Existing L-T Public Supply [1]	30	145	212	307	177	317	57	235	109	628	13	231	235	64
Existing L-T Public Demand	22	87	188	221	116	145	41	144	103	548	10	138	238	52
Currently Available L-T Public Spaces	8	58	24	86	61	172	16	91	6	80	3	93	-3	12
Future L-T Parking Required [2]	0	3	10	6	4	122	0	2	3	7	2	1	2	0
Available Future L-T Public Spaces [3]	8	55	14	80	57	50	16	89	3	73	1	92	-5	12
Future Supply Required to Achieve 85% Occupancy (L-T) [4]	26	106	233	267	141	314	49	171	125	652	15	164	283	61
Available L-T Parking Spaces at 85% Occupancy [5]	4	39	-21	40	36	3	8	64	-16	-24	-2	67	-48	3
Recommended Additional L-T Parking	0	0	21	0	0	0	0	0	0	24	0	0	48	0
Existing S-T Public Supply [1]	71	70	128	205	345	53	76	185	52	385	72	22	173	16
Existing S-T Public Demand	64	60	120	178	275	39	58	135	37	359	62	13	178	7
Currently Available S-T Public Spaces	7	10	8	27	70	14	18	50	15	26	10	9	-5	9
Future S-T Parking Required [2]	4	13	44	52	19	317	2	11	12	29	12	9	11	5
Available Future S-T Public Spaces [3]	3	-3	-36	-25	51	-303	16	39	3	-3	-2	0	-16	4
Future Supply Required to Achieve 85% Occupancy (S-T) [4]	80	86	193	270	346	419	71	172	58	456	87	26	222	14
Available S-T Parking Spaces to Ensure Maximum 85% Occupancy [5]	-9	-16	-65	-65	-1	-366	5	13	-6	-71	-15	-4	-49	2
Recommended Additional S-T Parking	0	16	65	65	0	0	0	0	0	71	0	0	49	0
Recommended Conversion of Public L-T to S-T Parking (short-term recommendations)	0	16 [6]	0	40 [6]	0	0	6 [6]	97 [6] [7]	0	53 [6]	0	15 [6]	14 [6]	5 [6]
Total Recommended Additional Parking	0	0	86	25	0	0	0	0	0	42	0	0	97	0

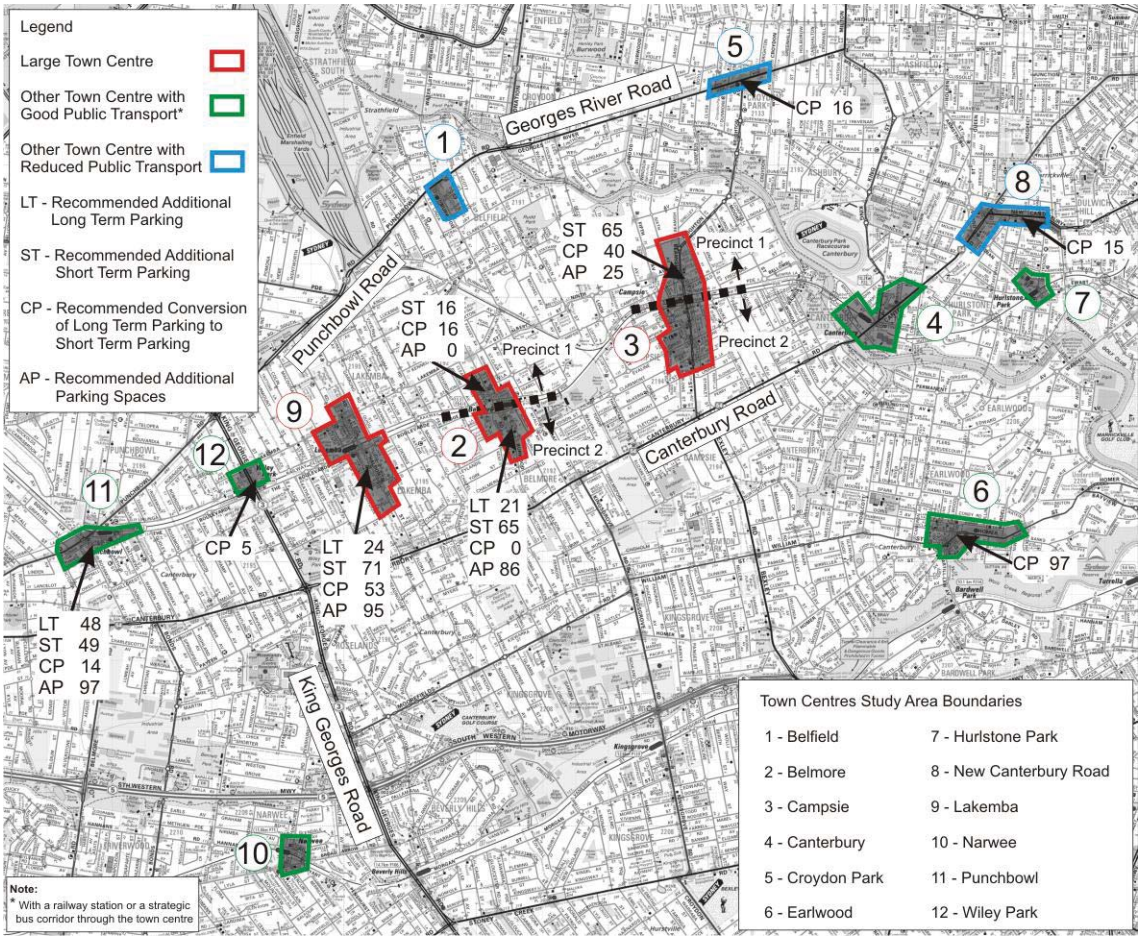
[1] Excludes spaces on private property
[2] Predicted Future Demand (from the future car parking model excluding residential demand) minus Calibrated Demand (from the Calibrated Model)
(Existing Demand + Future Demand) – Existing Supply
[4] Addition of Existing Parking Demand and Future Parking Required / 0.85
[5] Difference between existing supply and future supply required to achieve 85% occupancy
[6] See Parking Supply and Management Recommendations plans for locations.
[7[Includes car parking on the Coles site.

Where a surplus is indicated, existing car parking supply is greater than the predicted demand and therefore no additional parking is required for that type of parking within the town centre.

Figure 6.15 illustrates the town centres which GTA Consultants have determined will require additional commercial car parking to meet future demand. These are:

- 2 - Belmore
- 3 - Campsie
- 4 - Canterbury
- 9 - Lakemba
- 11 - Punchbowl.

Figure 6.15: Approximate additional parking recommendations



The expected additional car parking spaces for each town centre identified in Figure 6.15 will form the basis of recommendations to the existing Canterbury DCP. The car parking surveys, existing land use surveys and calibrated car parking models will be used to guide the changes to each centre over the next 10 years. The amount of additional car parking indicated in Figure 6.15 can be considered a guide and is intended at this stage to provide direction to each centre. As the centres develop, the amount of additional car parking required should be refined.

On-site private parking requirements for future residential development are required to be met by the developers.

The car parking rates presented in this report provide guidance at a broad planning level only and more detail would be required as part of the detailed planning for each development site. In addition, the additional car parking recommended for each centre would need to be considered as part of the review of the DCP.

7. Car Parking Strategies

7.1 Introduction

To help determine the basis of any applied car parking strategies for the town centres, it is important to understand some of the fundamental, guiding principles which relate to car parking and planning within town centres.

The following sections present some of the overarching principles that were considered during the process of identifying strategies to mitigate existing car parking issues and those that are expected to arise in the future, following potential redevelopment within the town centres. The principles are related to prioritising allocation of parking spaces, the acceptable walking distances for various land uses and user types, and the theoretical parking capacity of each town centre to ensure future parking demand would approximately equal 85% of parking supply.

7.1.1 What is Car Parking?

As a general rule, land uses generate and attract patrons, customers, staff and / or residents. A by-product of access to these land uses is, in its simplest form, a 'trip'. Trips can be made by a variety of methods including (but not limited to) walking, cycling, public transport and / or the private motor vehicle.

Where does car parking enter this equation? Car Parking provides an end of trip facility for the private motor vehicle mode.

Each type of land use has differing levels of attractiveness (i.e. trip generation) and therefore different requirements for car parking. Different uses also have different customer bases and in turn, different needs in regard to their required length of stay. Accordingly, different types of car parking are required (short term parking – 5 minutes to 3 hours and long term parking – 4 hours to all day) to satisfy differing needs.

In a town centre, it is important to recognise the differing user group needs and attempt to balance the impacts that car parking can have on the town centre.

There are various ways in which these parking demands can be satisfied:

iv individually on each development site
v on-street
vi within public off-street facilities.

The following parking strategies explore the ways in which parking for the town centres are being provided and how demands should be accommodated both now and in future.

7.1.2 Amenity

Differing approaches can be taken to the provision of car parking, particularly around town centres where an interface exists between residential and commercial uses.

The use of a peripheral area parking around town centres is a common occurrence to support the core areas which often results in intrusion into surrounding residential areas.

While traditional residential areas are sought to be protected from commercial intrusion, those adjacent to a town centre cannot expect the same level of amenity as those in outer residential areas. Indeed the benefits of living close to a Town Centre must also be considered in the context of a lower level of amenity.

7.1.3 Appropriate Walking Distance

Acknowledgement must be given to appropriate walking distances between car parking locations and a user's intended destination. Generally, the time and distance which drivers are prepared to walk depends on the length of time which will be spent at their destination.

The Victorian Transport Policy Institute of Canada[2] paper on Shared Parking[3] provides appropriate walking distances for various activities. Table 7.1 has been prepared which provides adapted values for Australian conditions.

Table 7.1: Acceptable Walking Distances (Adapted from the Victorian Transport Policy Institute, Canada)

Adjacent (Less than 50m)	Short (Less than 250m)	Medium (Less than 400m)	Long (Less than 500m)
People with disabilities Deliveries and loading Emergency services Convenience store	Grocery store Professional services Medical clinic Residents	General retail Restaurant Employees Entertainment centre Religious institution	Airport parking Major sport or cultural event Overflow parking

Note: This table assumes 'good' pedestrian conditions which include level ground and good quality uncovered footpath, pram crossings and a mild climate.

Table 7.1 shows that the uses whose customers would stay for the shortest time typically accept the shortest walking distances and as the time each user expects to spend at the destination, the longer they find it acceptable to walk.

7.1.4 Theoretical Capacity

Typically, parking utilisation greater than 85%[4] represents a situation where drivers are unable to identify where vacant spaces exist and subsequently represents effective capacity. Based on this, the theoretical capacity of the study area that will be aimed for is 85% for on-street spaces and off-street spaces.

7.2 Inspection and Identification of Issues

To better understand the issues identified by the community consultation, site visits of each town centre were undertaken by GTA Consultants. Prior to the site visits, the issues raised through the community consultation were reviewed with all inspected on-site.

Through the inspections of each town centre, a number of common themes and inconsistencies for parking between the town centres were identified. These included:

[2] An independent Canadian transport research organisation.

[3] Shared Parking, Sharing Parking Facilities Among Multiple Users, Victoria Transport Policy Institute, January 2010 http://vtpi.org/tdm/tdm89.htm

[4] Donald Shoup, *The Price of Parking on a Great Street*, Parking World, February 2009

- parking restriction signs on main roads not conforming with the Australian Standards, in addition, some centres contain a mixture of old and new parking sign types
- length of parking restrictions (number of short-term and long-term parking spaces)
- locations and numbers of loading zones
- numbers of disabled parking spaces
- location and lengths of bus stops.

Table 7.2 compares available short-term parking, loading zones and disabled parking supply against the commercial floor area (per 100sqm GFA) within the town centres.

The commercial floor area included in the analysis included:

- Retail Shops
- Hotel/Clubs
- Restaurants (Excluding Drive-Through Take-Away)
- Child Care Centres
- Medical Centre.

Drive-Through Take-Away was excluded from the analysis as these restaurants have on-site parking facilities to cater for the use.

Table 7.2: Comparison of Town Centre Commercial Floor Area and Parking Supply.

Site	Commercial Floor Area (sqm GFA)	Parking Spaces					
		Short Term		Loading Zone		Disabled	
		Spaces	per 100 sqm	Spaces	per 100 sqm	Spaces	per 100 sqm
Belfield	7310	71	0.971	1	0.014	1	0.014
Belmore - Precinct 1	6161	70	1.136	0	0	5	0.081
Belmore - Precinct 2	15560	128	0.823	6	0.039	18	0.116
Campsie - Precinct 1	16429	221	1.345	8	0.049	11	0.067
Campsie - Precinct 2	47349	345	0.729	8	0.017	35	0.074
Canterbury	14254	53	0.372	0	0	5	0.035
Croydon Park	5940	76	1.279	0	0	7	0.118
Earlwood	27135	185	0.682	9	0.033	18	0.066
Hurlstone Park	3212	52	1.619	0	0	1	0.031
Lakemba	36760	398	1.083	17	0.046	27	0.073
Narwee	5609	72	1.284	0	0	3	0.053
New Canterbury Road	16810	31	0.184	0	0	2	0.012
Punchbowl	12167	173	1.422	1	0.008	6	0.049
Wiley Park	3440	16	0.465	0	0	0	0
Total	218136	1891	0.867	49	0.022	137	0.063
Minimum per 100 sqm			**0.184**		**0.000**		**0.000**
Average per 100 sqm			**0.957**		**0.015**		**0.056**
Maximum per 100 sqm			**1.619**		**0.049**		**0.118**

Table 7.2 indicated that:

- There is a large variation in the supply of short-term parking per 100sqm of commercial floor area between the centres
- Six of the centres did not provide formal on-street loading zones
- Wiley Park did not provide disabled parking.

Long-term parking is difficult to compare between centres as the proportion of long-term parking supply in residential areas differs between town centres, which impacts on the reliability of directly comparing the results.

Table 7.2 has been used as a starting point of the strategy assessment to determine where more short-term parking, loading zones and disabled parking are required for each centre to bring consistency across the LGA.

7.3 Strategies to Manage Existing Car Parking Demands

Following site visits of each town centre, GTA Consultants identified opportunities and constraints associated with each issue. The following section sets out general recommendations to manage existing car parking demand.

7.3.1 General Parking Principles

The following section presents general recommendations which should be considered to provide a consistent approach across all the town centres.

Hierarchy of Parking Types

With a mixture of uses in each town centre, there will always be a number of conflicting demands for car parking spaces. To allocate on-street spaces to provide the greatest overall benefit to the town centre, Table 7.3 has been prepared to provide guidance to Council and the community regarding parking allocation and to assist when requests for specific parking restriction changes are required.

Table 7.3: Town Centre Parking Allocation Guidelines – On-Street

Priority (Highest to Lowest)	Description
Disabled	In accordance with identified needs and relevant standards.
Public Transport Zone	Bus stop or taxi stand (where applicable)
Loading Zone	If off-street loading is not provided
Bicycle Parking	Where bicycle parking on footpaths is not possible
Drop off / Pick up	Short term (2 min to 15 min) parking
Customers / Shoppers	Time restrictions generally vary from 15 minutes to 2 hours as required by the nature of the business, for example short term for take-away restaurant, convenient shops and longer term for restaurants, office and visiting.
Car Sharing	One or two bays where applicable
Residential (including visitors)	Only applies in smaller centre with a mix of shop and residences; requires balancing of economic needs of the strip and surrounding residential amenity.
Employee	Local employees should not park in shopping strips where this undermines parking turnover that supports the businesses. Employees should be encouraged to use non car based transport (if possible) or to park away from the town centre.
Commuter Parking	Parking for commuter use should only be considered where deemed to be appropriate and not impact on residential amenity or economic viability.

Table 7.3 shows that disabled car parking, sustainable transport, facilities, loading zones and customer parking should be allocated the highest priority and with employees and commuters allocated the lowest priority within a town centre.

Consistent Location of Parking Restrictions within Town Centres

Figure 7.1 has been prepared to show the recommended general approach across all town centres to provide certain expectations to customers of the centres.

Figure 7.1: Consistent Parking Restriction Approach within Town Centres

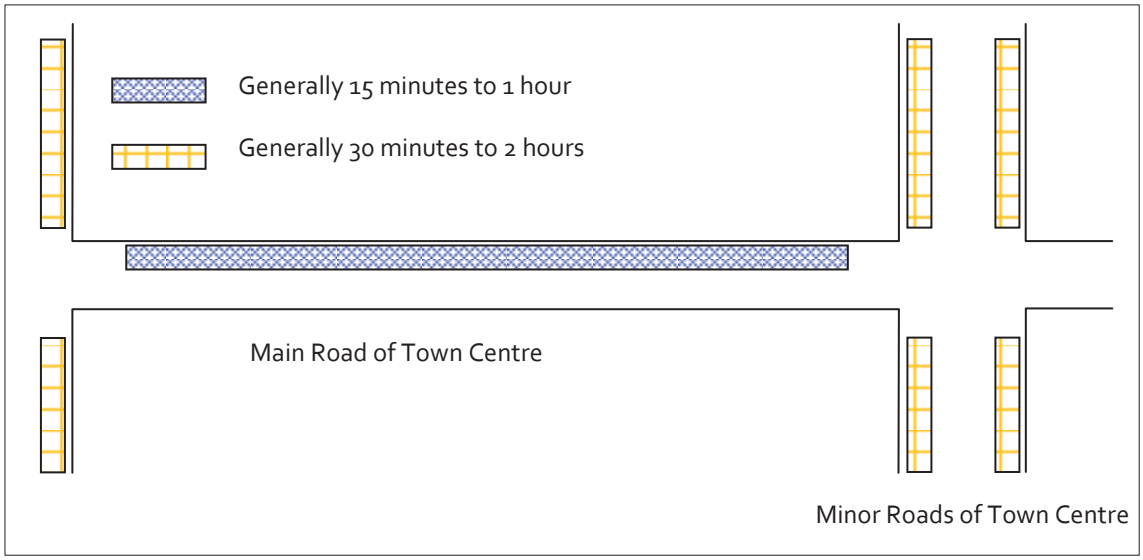
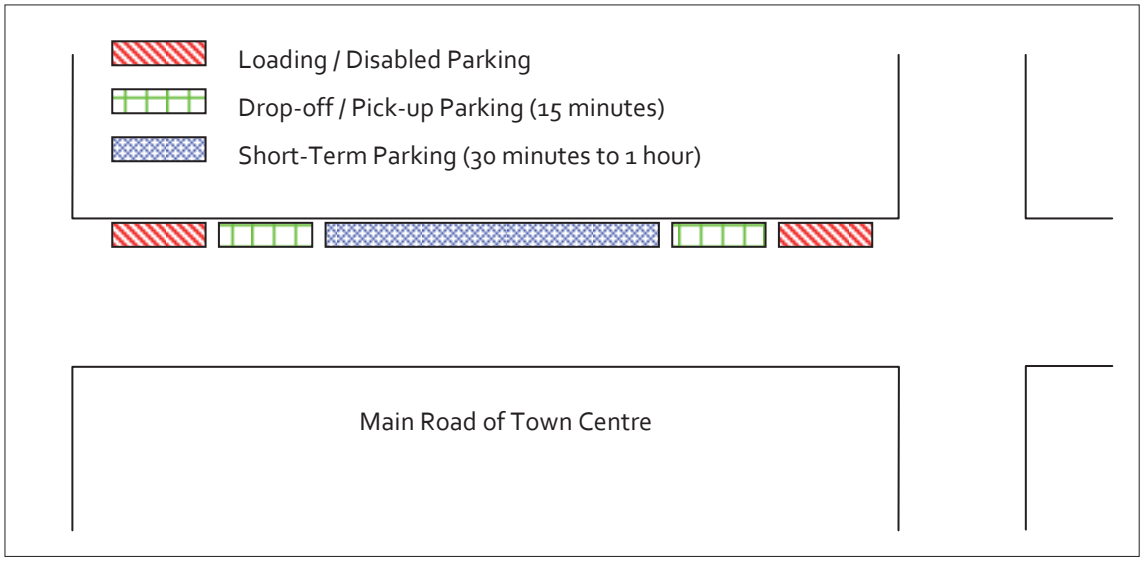


Figure 7.1 indicates that in general, the shortest parking restrictions should be provided on the main road of each town centre with extended car parking restrictions provided on the minor roads of each town centre, adjoining the main road. A consistent approach across each town centre would improve customer expectations of parking and provide Council with a consistent approach to assessing requests for parking restriction changes. More specific information in relation to how parking restrictions should be allocated on a main shopping street is provided in Figure 7.2.

Consistent Location of Restrictions on Main Roads

Figure 7.2 has been prepared to provide a consistent approach to locating parking restrictions on main shopping streets.

Figure 7.2: Consistent Parking Restriction Approach on Main Town Centre Road



The strategy indicated in Figure 7.2 seeks to provide service vehicle parking, disabled parking and those with short time restrictions at the ends of road sections with larger bands of the longer term restrictions within the middle section of the road link. Such an approach seeks to improve driver expectation of surrounding parking restrictions with longer term parking provided within the link core and shorter term provided at the link fringe where access is easier. These guidelines should be considered in relation to the land uses on the main road. Overtime as uses in the town centre change the restrictions should be reviewed by Council and changed as required. This should also occur as requests from residents or traders are made to Council.

Table 7.4 provides examples of typical parking restriction times suitable for corresponding land use types.

Table 7.4: Example Parking Durations for Land Uses

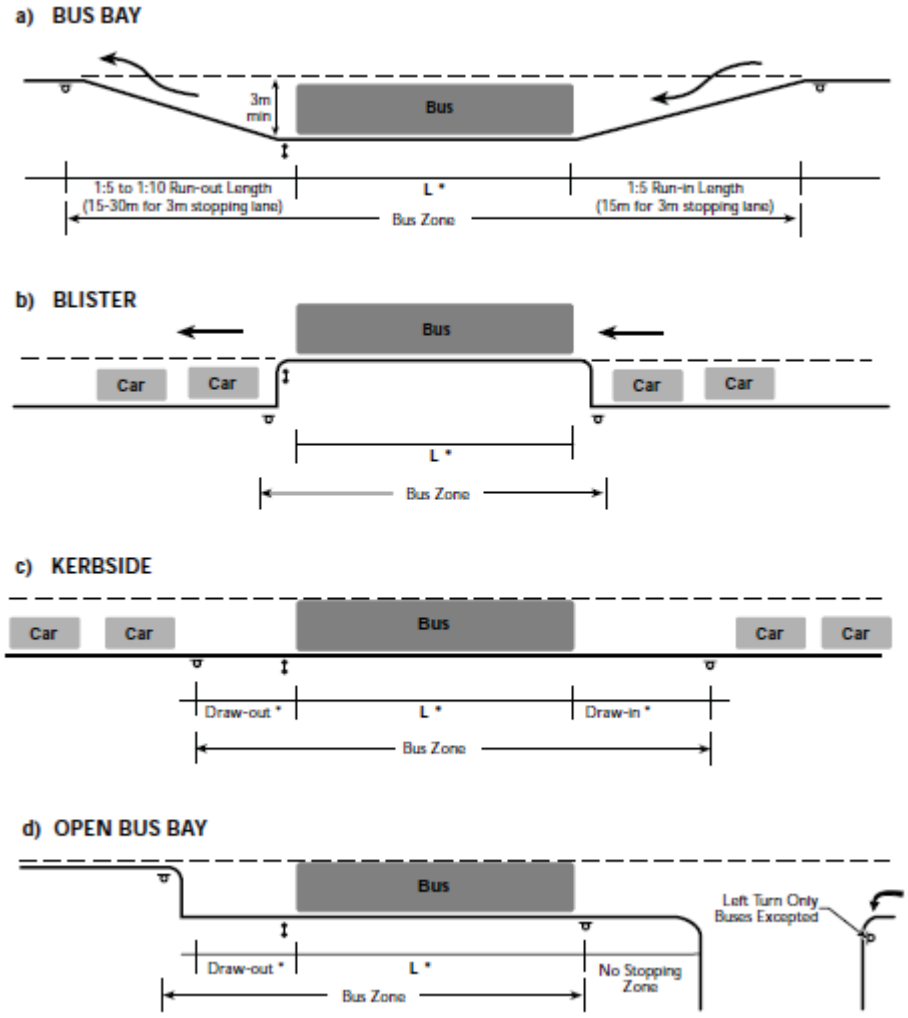
Drop off / Pick Up Parking 0 – 15 minutes	Short Term Parking Category 1 hour	Short Term Parking Category 2 hour
Convenient Store	General Retail Shop	Restaurant
Take away food store	Medical Centre	Supermarket
Dry Cleaners	Café	Hairdresser
Bank / ATM	Visitor centre	Business meetings

When setting time restrictions, consideration must also be made of multi-purpose trips where a number of land uses could be visited as part of a single trip.

Bus Zones

In order to provide efficient ingress and egress to and from bus stops within town centres, Figure 7.3 and Figure 7.4 illustrate the layout of various bus zone types and bay dimensions reproduced from the 'Bus Stop Installation Guide for Local Councils'[5] design manual.

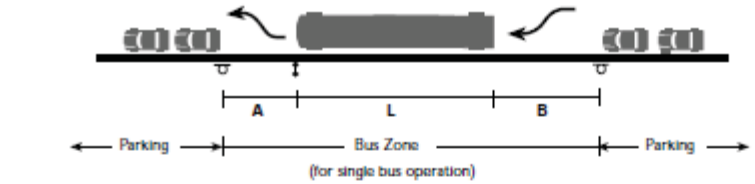
Figure 7.3: Bus Zone Types

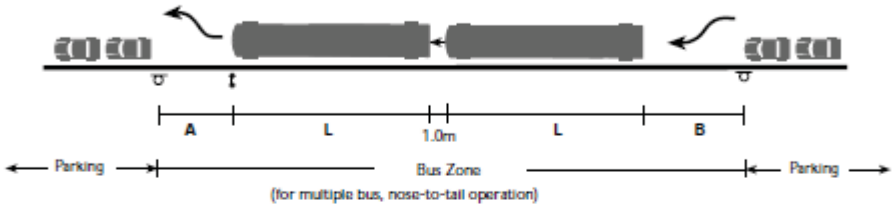


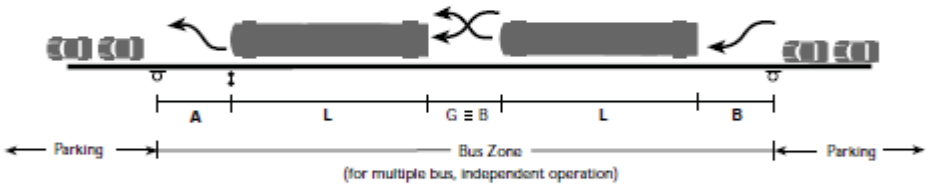
Source: State Transit 'Bus Stop Installation Guide for Local Councils' 2002, Figure 2 & 3

[5] State Transit, *Bus Stop Installation Guide for Local Councils* 2002

Figure 7.4: Bus Zone Types







Bay Dimensions (m)	Midi	Design Bus	Long	Articulated
L = length of bus	9.0	12.5	14.5	17.5
A = minimum draw out length *	3.0	4.0	4.0	4.0
B = minimum draw in length	6.0	6.0	8.0	10.0
G = minimum gap for independent operation	6.0	6.0	8.0	10.0

Note: **When located on-street close to an intersection, the statutory no-standing distances may be substituted for dimensions A or B for bus stops on the immediate approach and departure side of the intersection respectively.*

Design for Midi buses only in exceptional circumstances. In general, Design Bus should be used.

Source: State Transit 'Bus Stop Installation Guide for Local Councils' 2002, Figure 2 & 3

It is recommended that Figure 7.3 and Figure 7.4 be used to guide the location and design of bus stops within town centres. The use of this standard design will ensure that bus stops within the town centres are consistent in dimension and allow efficient ingress and egress.

Laneway Loading

In many town centres, illegal loading activities were observed in laneways at the rear of buildings with 'No Stopping' and 'No Parking' restrictions. In order to legalise loading activities in laneways, for example through the introduction of a loading zone on one side of the lane, the road width must be

sufficient to ensure parked vehicles do not obstruct through traffic. Table 7.5 presents the desirable minimum and minimum dimensions required to introduce loading zones into laneways at the rear of buildings.

Table 7.5: Minimum Dimensions of Loading Zones in Laneways

	Through Lane Width (metres)	Loading Zone Width (metres)	Total Laneway Width (metres)
Desirable Minimum	3.5 [1]	2.6 [2]	6.1
Minimum	3.2	2.6 [4]	5.8

[1] AS2890.2-2002 Table 3.1
[2] AS2890.5-1993 Table 2.1
[3] Based on the maximum width of a delivery vehicle including mirrors and an allowance of 300mm on each side of the
[4] Based on GTA Consultants research into delivery vehicle widths and AS2890.2-1993

Council can also vary these dimensions based on the size of the trucks expected to utilise each particular lane way.

Parking Signage

It is recommended that all parking signs are compliant with AS1742.11 to ensure consistency throughout the town centres. A key issue identified during various site visits was parking signs not consistently installed at each end of the parking resulting in these locations not being able to be enforced. In addition, some town centres contain a mixture of old and new parking sign types. This could have been as a result of sign posts being removed during construction or as a result of an incident where Council was not notified that a sign had been removed.

Belfield and New Canterbury Road are town centres which had been identified as having parking signs missing in some locations or signage not consistent with the Australian Standards. The locations are shown in Figure 7.9 and Figure 7.18.

Directional Signage for Council Car Parks

One issue raised during the community consultation was in relation to the lack of directional signage to council car parks available within each town centre. Although Earlwood was mentioned specifically in this round during the initial consultation, to ensure consistency across the LGA, it is recommended that all town centres have directional signage to public car parks. Directional signage should be placed in locations which are clearly visible and at a safe distance to ensure sufficient advance warning of the car parks.

In many cases, directional signage does exist but in many cases it is inconsistent as indicated in Figure 7.5 to Figure 7.8.

Figure 7.5: Belmore

Figure 7.6: Hurlstone Park

Figure 7.7: New Canterbury Road

Figure 7.8: Lakemba

It is recommended that a consistent directional signage approach be developed by Council for all town centres or at a minimum, within large town centres to provide consistent awareness of the location and availability of public car parks across the town centres.

7.3.2 Town Centre Specific Parking Management Strategies

The following section presents the strategies developed to manage existing car parking demand issues identified for each town centre. GTA Consultants has consulted with the representatives of the Economic Development Committees and the Chamber of Commerce for each centre and this consultation has assisted us in developing these strategies.

As previously outlined, the purpose of this report is not to identify and solve every parking issue across each town centre, but to instead focus on providing example solutions to problems that could arise within town centres across the LGA.

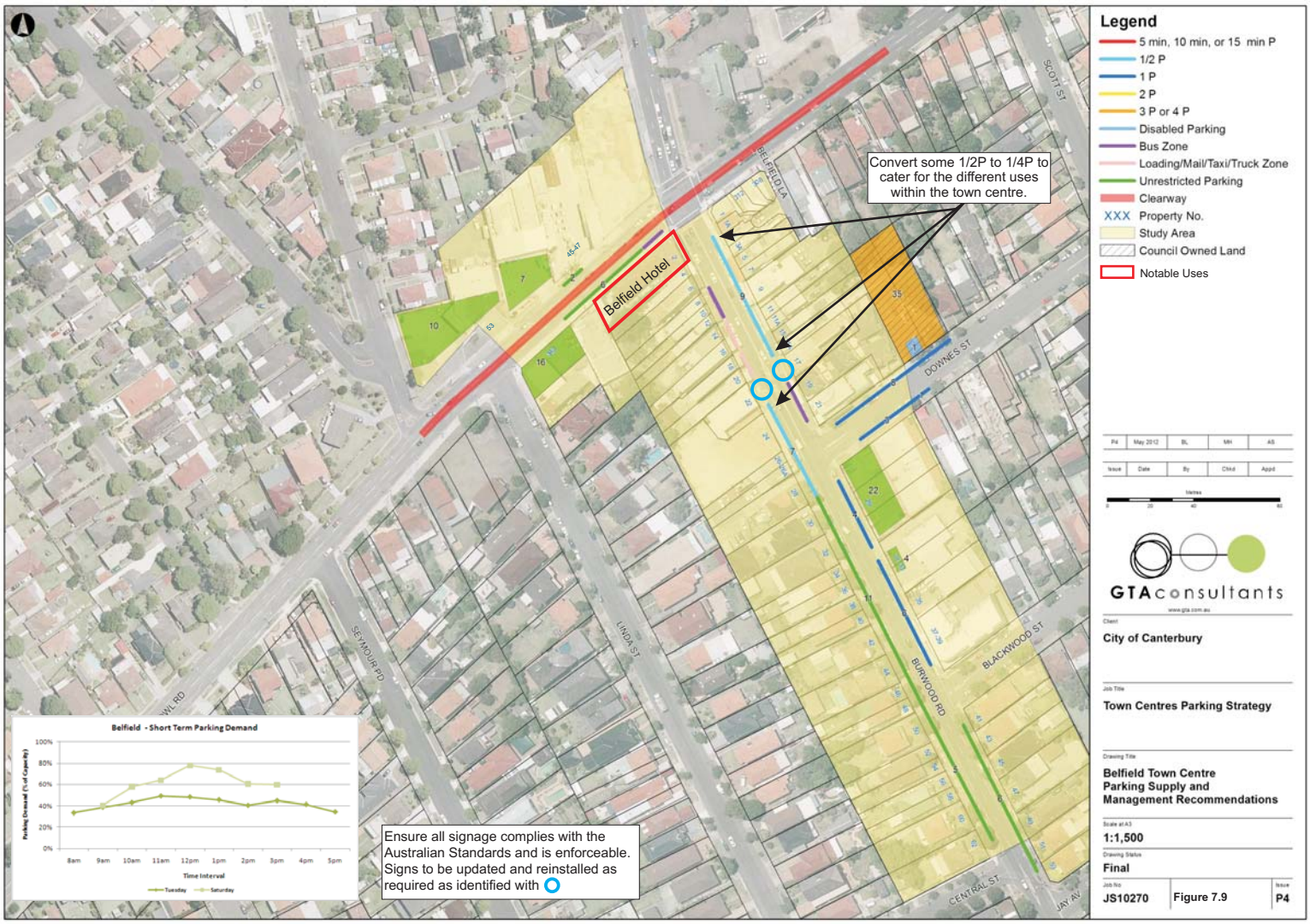
Belfield

Table 7.6 presents the issues determined through community consultation and site inspections along with recommendations for the Belfield town centre.

Table 7.6: Belfield – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Inconsistent signage (signage did not end correctly) is not enforceable at the Loading Zone on west side of Burwood Road and Bus Zone on east side of Burwood Road near the intersection with Downes Street.	Replace inconsistent signage so that restrictions are enforceable.	Staff member at Council is required to monitor signage or respond to issues as they are raised. Minor cost involved in replacement of signage.	Update and/or reinstall signage to ensure all signage complies with Australian Standards and are enforceable.
Long lengths of 1/2P and 1P parking restrictions adjacent to a range of similar uses such as chemist, bakery, chicken shop.	Consideration could be given to a range of parking restrictions within each block to cater for the different uses.	The current arrangement may be operating well and a change may not be well received or considered necessary by the local residents or traders.	Convert some 1/2P to 1/4P to cater for the different uses within northern part of the centre.

A summary of the management recommendations for the Belfield town centre are presented in Figure 7.9.


Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
Convert some 1/2P to 1/4P to cater for the different uses within the town centre.
Belfield Hotel
Ensure all signage complies with the Australian Standards and is enforceable. Signs to be updated and reinstalled as required as identified with
Belfield - Short Term Parking Demand
Time Interval
8am
9am
10am
11am
12pm
1pm
2pm
3pm
4pm
5pm
Tuesday
Saturday
DELFIELD LA
SCOTT ST
DOWNES ST
LINDA ST
SEYMOUR RD
BURWOOD RD
BLACKWOOD ST
CENTRAL ST
JAY AV
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Belfield Town Centre Parking Supply and Management Recommendations
1:1,500
Final
JS10270
Figure 7.9
P4

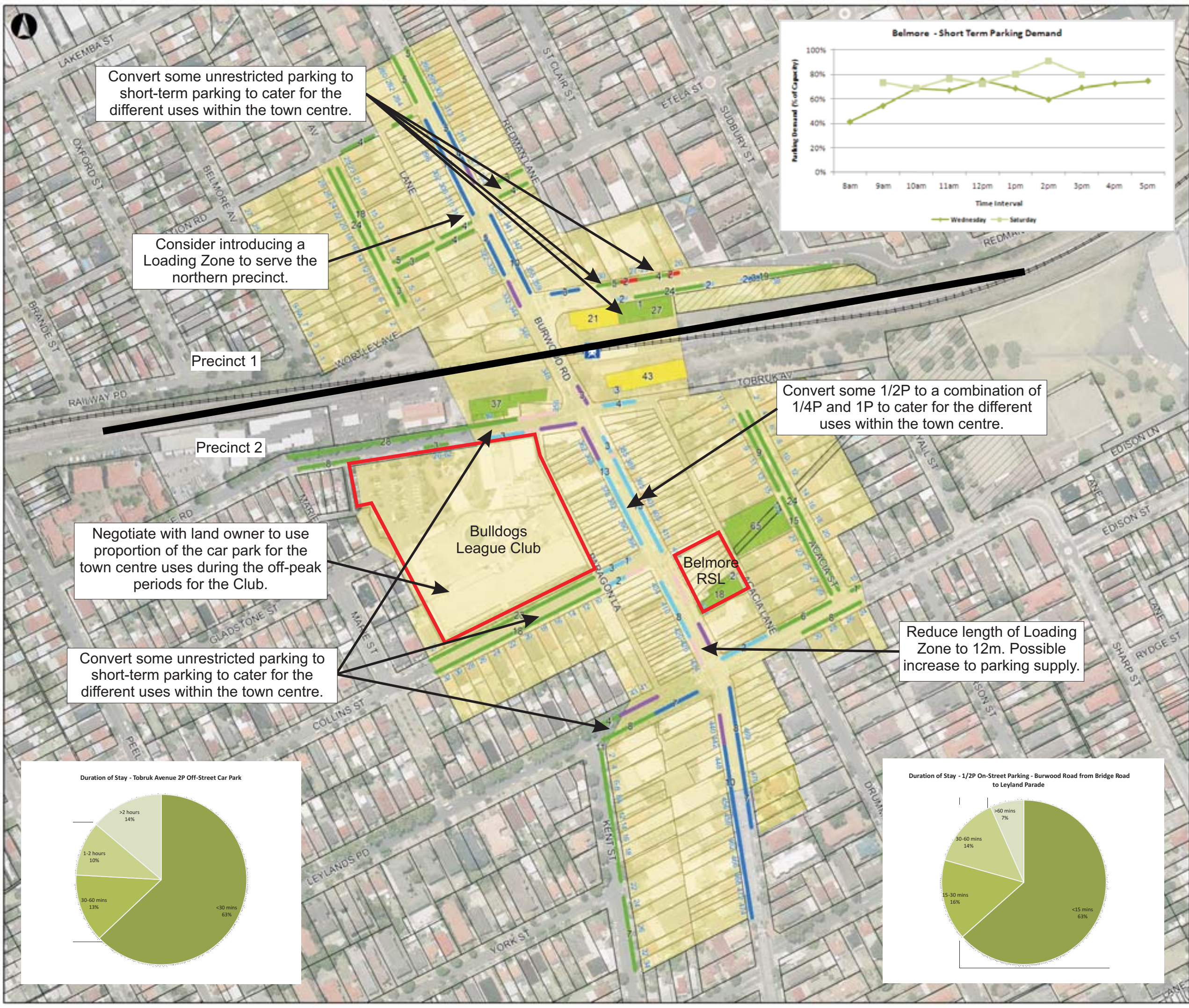
Belmore

Table 7.7 presents the issues determined through community consultation and site inspections along with recommendations for the Belmore town centre.

Table 7.7: Belmore – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Loading Zone requested to be provided in Acacia Lane.	Change the signage along the west side of lane to allow for loading. Lane becomes one way northbound	Lane width is approximately 4m which is to too narrow to park on and provide sufficient room for through traffic based on Table 7.5.	No further action. Existing restrictions to remain.
Bulldogs League Club is the dominant use in the centre with a large privately owned car park with unrestricted parking.	Potential to use the car park for other uses within centre, particularly for staff parking.	It is a privately owned car park therefore the spaces can be restricted at any time.	Negotiate with land owner to use proportion of the car park for centre uses during the off-peak periods of the Club.
Taxi zone on Burwood Road on the Belmore RSL frontage is too large.	Length of Taxi zone could be reduced to increase car parking spaces.	Only taxi zone in Belmore on Burwood Road and its location is the most suitable for the RSL and surrounding uses.	No further action. Existing taxi zone to remain unchanged
Loading Zone on Burwood Road near Leylands Parade is currently approximately 20m long.	Reduce length of Loading Zone to 12m. Possible increase to public parking supply.	May be required to satisfy the existing delivery vehicle length.	Reduce length of Loading Zone to maximum 12m.
1/2P restrictions only on Burwood Road.	Consideration could be given to a range of parking restrictions to cater for the different uses within the centre.	The current arrangement may be operating well and a change may not be well received or considered necessary by the local residents or traders.	Convert some 1/2P to a combination of 1/4P and 1P to cater for the different uses within the centre.
No on-street loading zone north of the railway line.	Create an on-street loading zone to serve the businesses north of the railway line.	Existing loading arrangements may be working satisfactorily.	Convert one parking space to a loading zone to cater for the businesses north of the railway line.

A summary of the management recommendations for the Belmore town centre are presented in Figure 7.10.



Legend

- 5 min, 10 min, or 15 min P
- 1/2 P
- 1 P
- 2 P
- 3 P or 4 P
- Disabled Parking
- Bus Zone
- Loading/Mail/Taxi/Truck Zone
- Unrestricted Parking
- Clearway
- XXX Property No.
- Study Area
- Council Owned Land
- Notable Uses

P4	May 2012	BL	MH	AS
Issue	Date	By	Chkd	Appd

GTA consultants
www.gta.com.au

Client
City of Canterbury

Job Title
Town Centres Parking Strategy

Drawing Title
Belmore Town Centre Parking Supply and Management Recommendations

Scale at A3
1:3,000

Drawing Status
Final

Job No		Issue
JS10270	**Figure 7.10**	**P4**

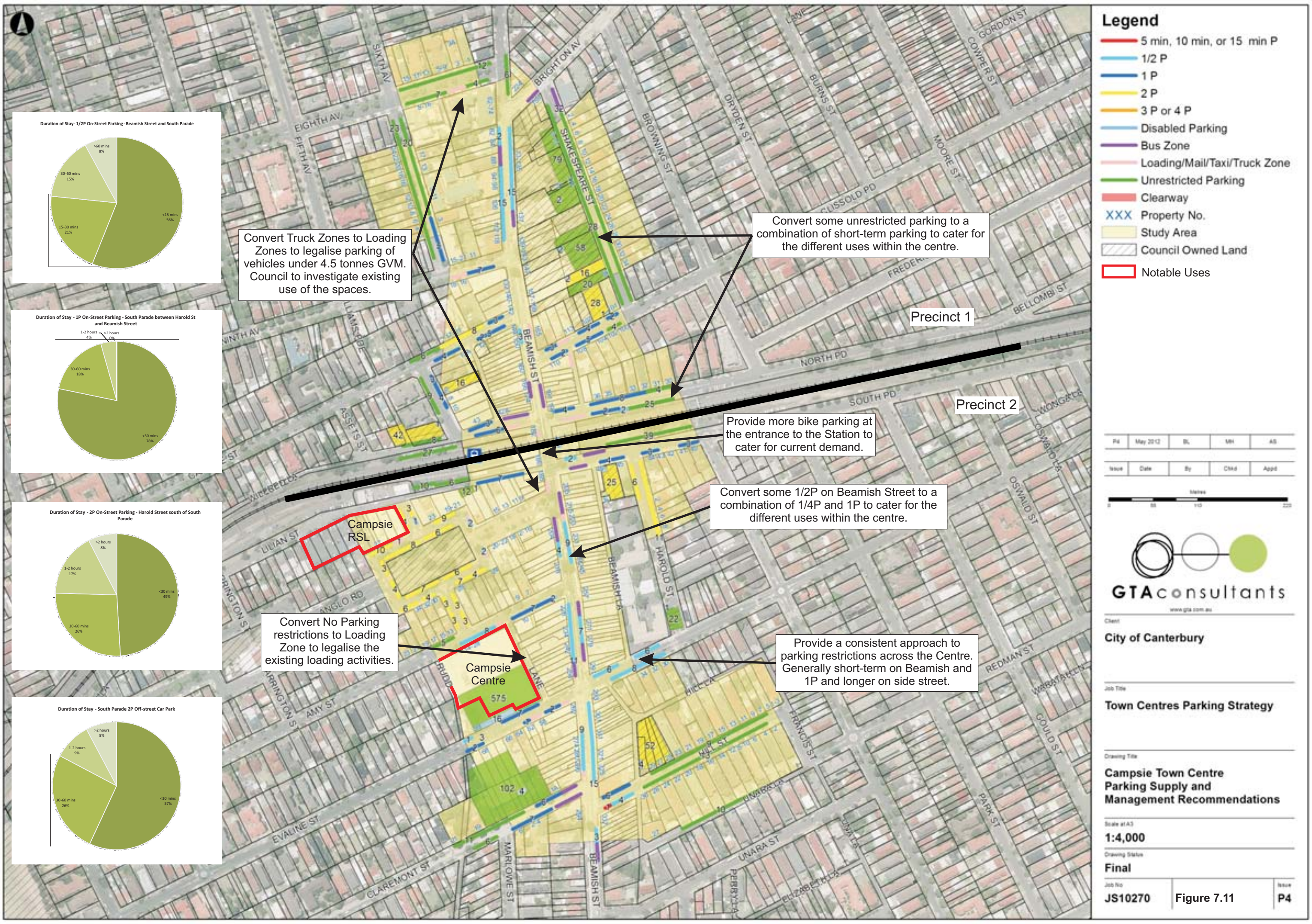
Campsie

Table 7.8 presents the issues determined through community consultation and site inspections along with recommendations for the Campsie town centre.

Table 7.8: Campsie – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Truck Zones on Beamish Street near the station can only be used by trucks (a vehicle greater than 4.5 tonnes GVM).	To convert the spaces to Loading Zone to allow vehicles under 4.5 tonnes GVM to legally park for loading activities.	There are currently limited legal opportunities/areas for trucks to load from. There may also be history behind the location which we are not aware of and further investigation is outside the scope of this project.	Convert Truck Zone to Loading Zone to legalise parking of vehicles under 4.5 tonnes GVM subject to formal investigation by the City of Canterbury.
Amy Lane is currently signed No Parking (8:30am to 6:00pm Mon-Fri and 8:30am-12:30pm Sat). Lane is currently being utilised as a loading zone for the shops on Beamish Street. Restriction is not being enforced. Lane is approximately 7m wide.	Convert No Parking restriction to Loading Zone to legalise the existing loading activities.	Possible issue with access required for the Campsie Centre.	If no issues arise from Campsie Centre, legalise existing loading activities in Amy Lane by converting No Parking on west side to Loading Zone.
Inconsistent restrictions with some streets off Beamish Street signed 1/2P and others 1P.	Provide a consistent approach across the centre.	The current arrangement may be operating well and a change may not be well received or considered necessary by the local residents or traders.	Generally maintain 1/2P (with consideration for the different uses in the town centre and Figure 7.2) on Beamish Street and convert all restrictions on side streets off Beamish Street to 1P or longer (having regard for required drop off spaces) for consistency.
Bicycles observed to be chained to the fence at the railway station.	Increase bicycle parking at the entrance of the railway station. Potential to encourage more cyclists.	Minor cost associated with providing extra facilities	Provide more bicycle parking facilities at the entrance of the railway station.
1/2P restrictions only on Beamish Street.	Consideration could be given to a range of parking restrictions to cater for the different uses within the centre.	The current arrangement may be operating well and a change may not be well received or considered necessary by the local residents or traders.	Convert some 1/2P to a combination of 1/4P and 1P to cater for the different uses within the centre.

A summary of the management recommendations for the Campsie town centre are presented in Figure 7.11.



Duration of Stay- 1/2P On-Street Parking- Beamish Street and South Parade
>60 mins 8%
30-60 mins 15%
15-30 mins 21%
<15 mins 56%
Duration of Stay - 1P On-Street Parking - South Parade between Harold St and Beamish Street
1-2 hours 4%
>2 hours 0%
30-60 mins 18%
<30 mins 78%
Duration of Stay - 2P On-Street Parking - Harold Street south of South Parade
>2 hours 8%
1-2 hours 17%
30-60 mins 26%
<30 mins 49%
Duration of Stay - South Parade 2P Off-street Car Park
>2 hours 8%
1-2 hours 9%
30-60 mins 26%
<30 mins 57%
Convert Truck Zones to Loading Zones to legalise parking of vehicles under 4.5 tonnes GVM. Council to investigate existing use of the spaces.
Convert some unrestricted parking to a combination of short-term parking to cater for the different uses within the centre.
Precinct 1
Precinct 2
Provide more bike parking at the entrance to the Station to cater for current demand.
Convert some 1/2P on Beamish Street to a combination of 1/4P and 1P to cater for the different uses within the centre.
Campsie RSL
Convert No Parking restrictions to Loading Zone to legalise the existing loading activities.
Campsie Centre
Provide a consistent approach to parking restrictions across the Centre. Generally short-term on Beamish and 1P and longer on side street.
BEAMISH ST
SHAKESPEARE ST
SOUTH PD
NORTH PD
HAROLD ST
Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
GTAconsultants
Client
City of Canterbury
Job Title
Town Centres Parking Strategy
Drawing Title
Campsie Town Centre Parking Supply and Management Recommendations
Scale at A3
1:4,000
Drawing Status
Final
Job No
JS10270
Figure 7.11
Issue
P4

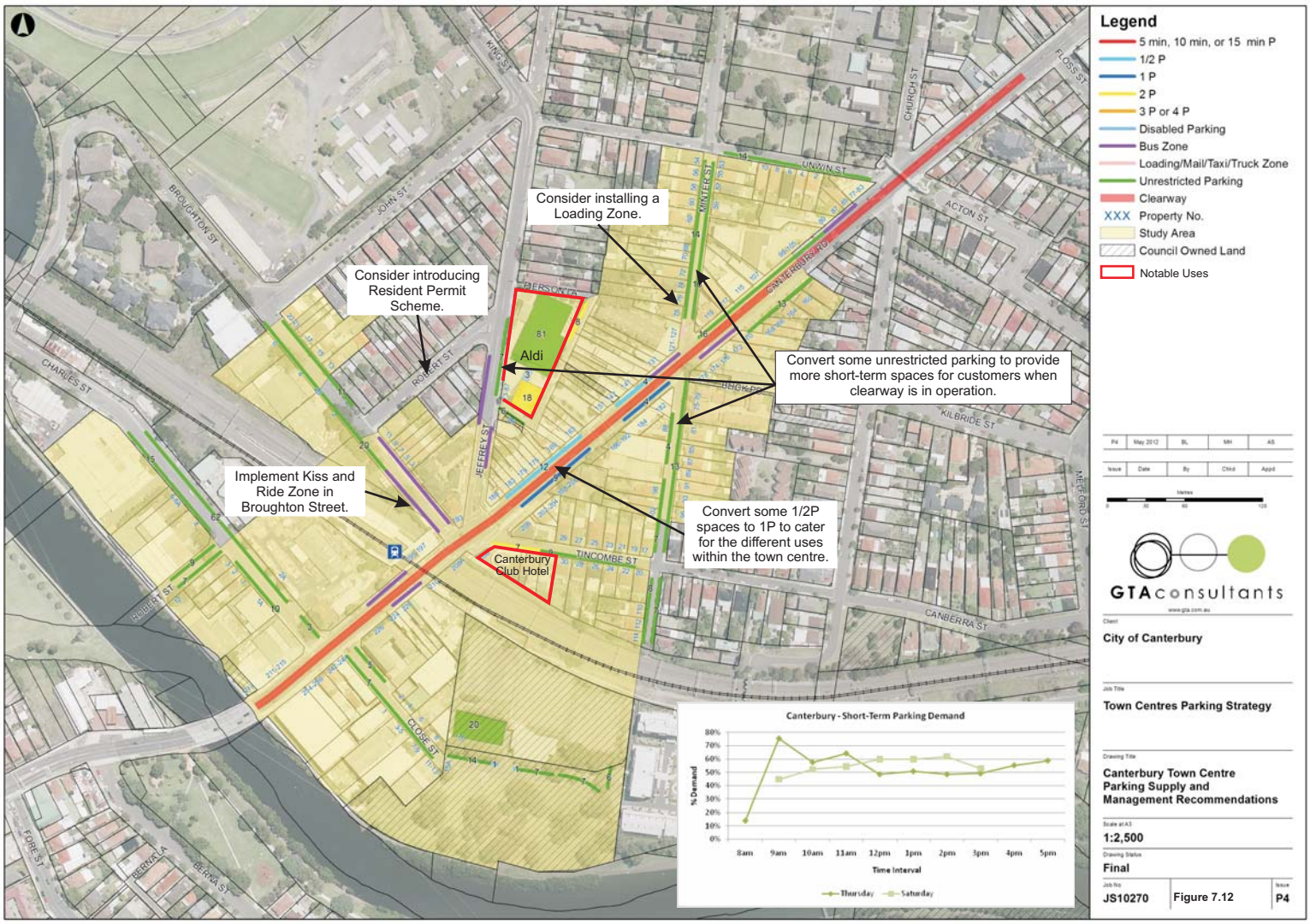
Canterbury

Table 7.9 presents the issues determined through community consultation and site inspections along with recommendations for the Canterbury town centre.

Table 7.9: Canterbury – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Existing Bus Zones on Broughton Street are being used for pick up and drop offs.	Create a Kiss and Ride Zone on Broughton Street.	Involves removing unrestricted parking spaces.	Create a 24-hour Kiss and Ride Zone on Broughton Street by removing two unrestricted parking spaces. Survey results for Canterbury show long term parking peaks at 61% at 9am therefore there are available spaces to accommodate the loss of two spaces.
No 1P parking available on north side of Canterbury Road.	Convert some 1/2P spaces to 1P to cater for different uses.	Clearway along Canterbury Road a current issue for short term parking supply within the centre.	Convert some 1/2P to 1P to cater for the different uses within the centre. Also convert some unrestricted parking spaces on side streets to a combination of 1/2P and 1P spaces to increase supply of short-term parking during clearway operation. (Refer to Figure 7.2)
No parking spaces on Canterbury Road during clearway operation	Widen Canterbury Road near Tincombe Street to create extra parking unaffected by clearway operation. (Community Consultation suggestion)	Expensive. May restrict area available to pedestrians.	Overall, there are 29 spaces between Jeffrey Street and Minster Street which peaked at 17 vehicles at 2pm. During clearway times it is recommended that long-term parking be converted to short-term parking on side streets to cater for the loss during clearways.
No on-street loading zones in the centre.	Create an on-street loading zone to provide improved access to delivery vehicles during clearway times.	Would result in the loss of one on-street car parking space.	Consider introducing an on-street loading zone to provide access for delivery vehicles when clearways are in operation.

A summary of the management recommendations for the Canterbury town centre are presented in Figure 7.12.


Consider installing a Loading Zone.
Consider introducing Resident Permit Scheme.
Implement Kiss and Ride Zone in Broughton Street.
Convert some unrestricted parking to provide more short-term spaces for customers when clearway is in operation.
Convert some 1/2P spaces to 1P to cater for the different uses within the town centre.
Aldi
Canterbury Club Hotel
Canterbury - Short-Term Parking Demand
% Demand
Time Interval
8am
9am
10am
11am
12pm
1pm
2pm
3pm
4pm
5pm
Thursday
Saturday
Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Canterbury Town Centre Parking Supply and Management Recommendations
1:2,500
Final
JS10270
Figure 7.12
P4

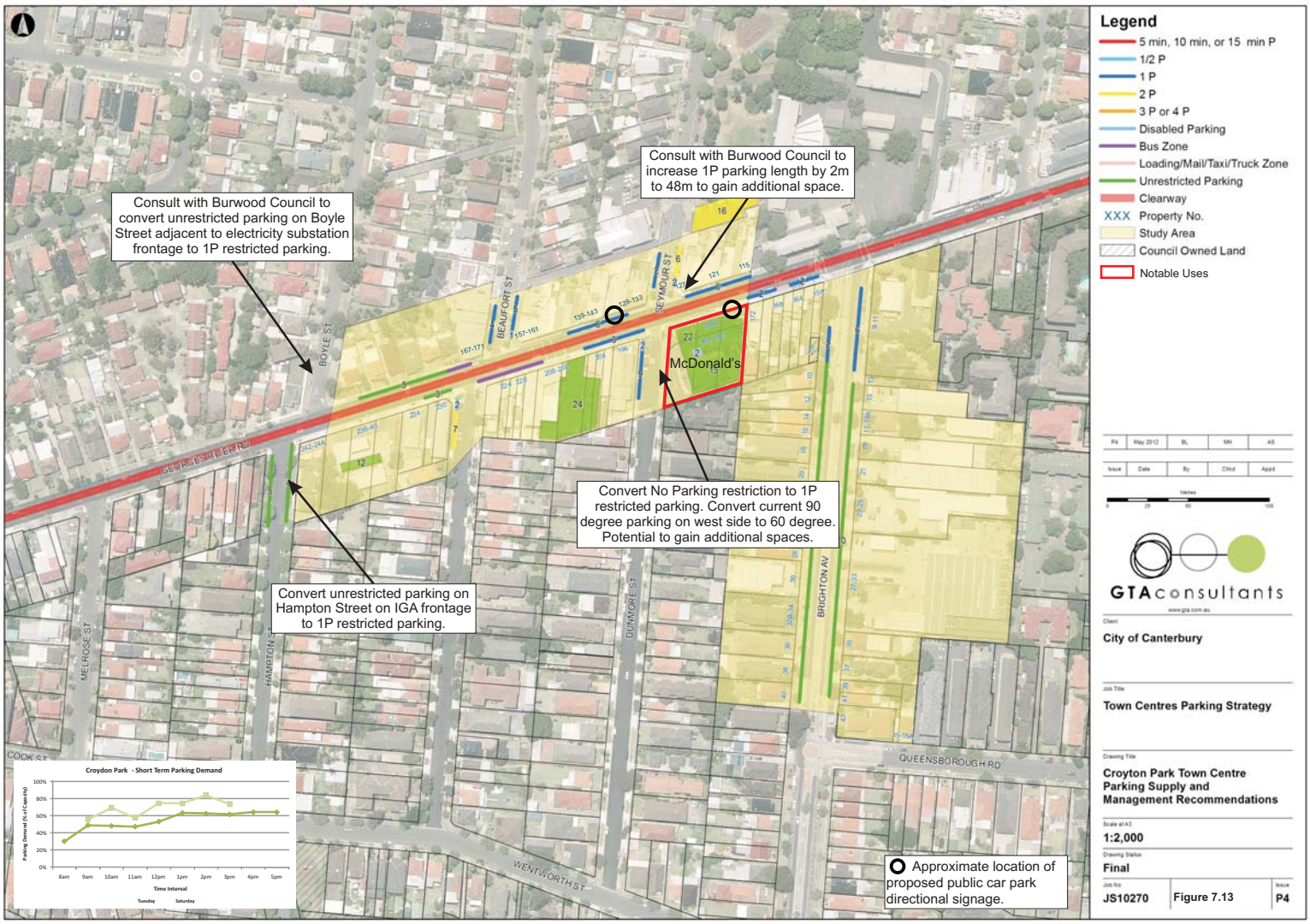
Croydon Park

Table 7.10 presents the issues determined through community consultation and site inspections along with recommendations for the Croydon Park town centre.

Table 7.10: Croydon Park – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
All 1P spaces adjacent to similar uses such as take away shops.	Consideration could be given to a range of parking restrictions to cater for the different uses within the centre.	The current arrangement may be operating well and a change may not be well received or considered necessary by the local residents or traders.	Convert some 1P spaces to a mixture of 1/4P or 1/2 P in accordance with Figure 7.2.
Lack of short-term parking adjacent to IGA on the corner of Georges River Road and Hamton Street, especially when clearway is in operation.	Convert some unrestricted parking to short-term parking to ensure IGA customers have the opportunity to park close to the supermarket.	Loss of some unrestricted car parking spaces in that location.	Convert unrestricted parking on Hampton Street on the IGA frontage to 1P Parking, and/or convert unrestricted parking on Boyle Street adjacent to electricity substation frontage to 1P Parking.
1P on the north side of Georges River Road between Seymour Street and School is 46m.	Possibility to increase the length (by 2m) and still be 10m from the corner of Seymour Street, to gain an additional space.	The northern side of Georges River road is outside the Canterbury LGA.	Consult with the Burwood Council to increase 1P parking restriction by 2m to 48m at the Seymour Street end to gain an additional parking space (based on AS2890.5-1993).
'No Parking' section along the frontage of McDonalds in Dunmore Street.	Convert No Parking section to short term parking to gain spaces.	90 degree parking on west side of street would likely have to be converted to 60 degree. Similar to the arrangement in Beaufort Street.	Convert No Parking restriction along the McDonalds frontage to 1P parking. Convert current 90 degree parking on west side to 60 degrees

A summary of the management recommendations for the Croydon Park town centre are presented in Figure 7.13.



Legend

- 5 min, 10 min, or 15 min P
- 1/2 P
- 1 P
- 2 P
- 3 P or 4 P
- Disabled Parking
- Bus Zone
- Loading/Mail/Taxi/Truck Zone
- Unrestricted Parking
- Clearway
- XXX Property No.
- Study Area
- Council Owned Land
- Notable Uses

Issue	Date	By	Chkd	Appd
P4	May 2012	BL	MH	AS

GTAconsultants

www.gta.com.au

Client: City of Canterbury

Job Title: Town Centres Parking Strategy

Drawing Title: Croyton Park Town Centre Parking Supply and Management Recommendations

Scale at A3: 1:2,000

Drawing Status: Final

Job No: JS10270

Figure 7.13

Issue: P4

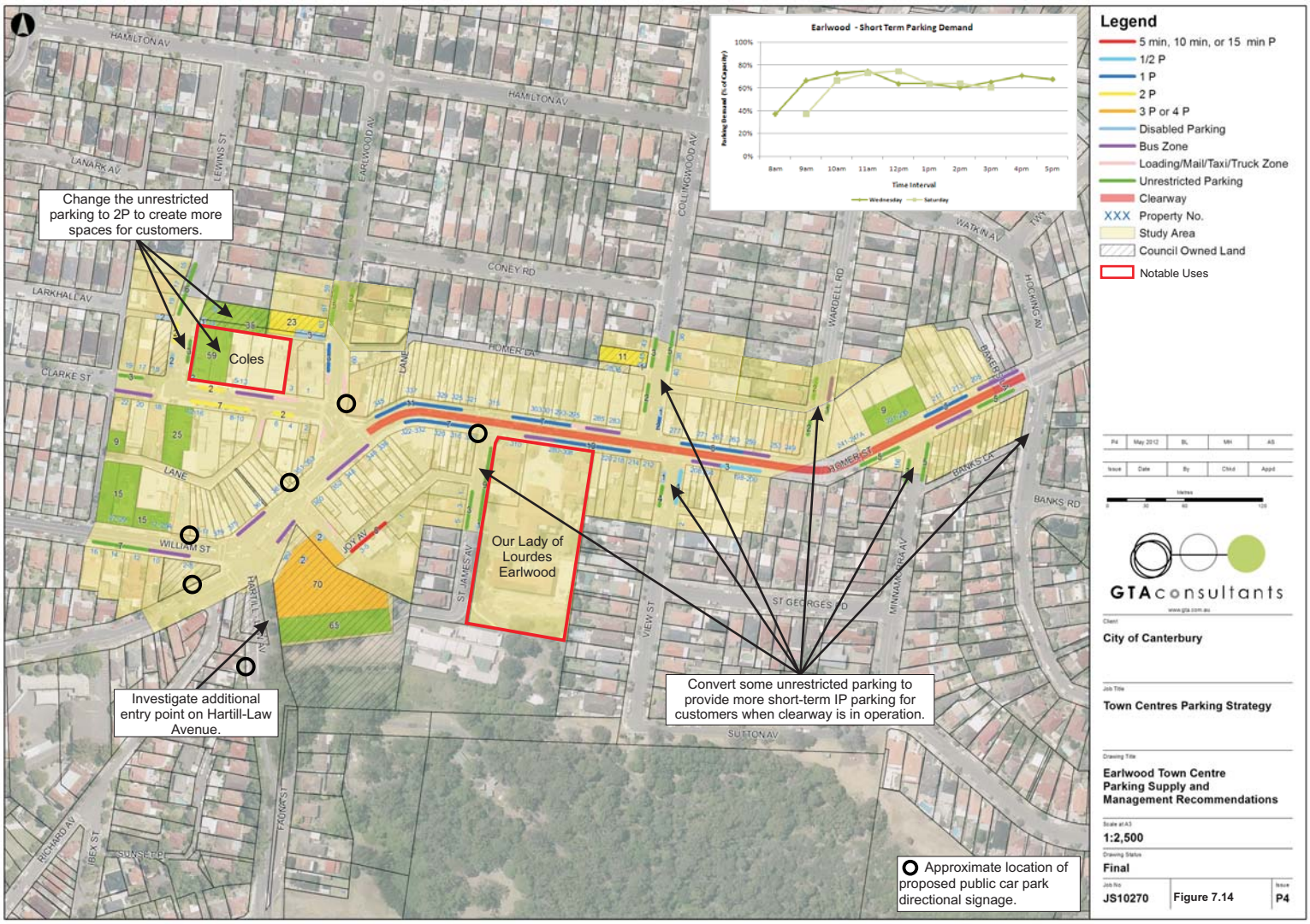
Earlwood

Table 7.11 presents the issues determined through community consultation and site inspections along with recommendations for the Earlwood town centre.

Table 7.11: Earlwood – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Homer Street busy during peak times. Clearways in each direction reduce parking available during that time.	Convert some unrestricted parking in the side streets to provide short-term parking opportunities for customers when the clearways are in operation.	Converting unrestricted spaces may be a contentious issue, especially if they are adjacent to residential properties.	Convert some unrestricted parking on the side streets between St James Avenue and Hocking Avenue on both north and south of Homer Street to short term parking.
Main centre car park does not have conspicuous signage.	Provide more consistent, conspicuous signage on all approaches to the main car park.	Minor cost associated with new signage.	Install public car park directional signage.
Main centre car park is difficult to access.	Provide a second entrance to the car park on Hartill – Law Avenue.	Costly to widen the road at that location to include a turn lane into the car park.	Investigate an additional entry point on Hartill-Law Avenue.
Unrestricted parking in Coles and the car park directly north of the supermarket is used by all day parkers removing the opportunity for customers to park in those spaces.	Introduce a restriction to the Coles car park and council car park north of the supermarket.	May shift all day parking to residential areas.	Change the unrestricted parking to 2P to create more spaces for customers. Consultation required with Coles and the land owner.

A summary of the management recommendations for the Earlwood town centre are presented in Figure 7.14.


Earlwood - Short Term Parking Demand
Parking Demand (% of Capacity)
100%
80%
60%
40%
20%
0%
8am
9am
10am
11am
12pm
1pm
2pm
3pm
4pm
5pm
Time Interval
Wednesday
Saturday
Change the unrestricted parking to 2P to create more spaces for customers.
Coles
Our Lady of Lourdes Earlwood
Investigate additional entry point on Hartill-Law Avenue.
Convert some unrestricted parking to provide more short-term IP parking for customers when clearway is in operation.
Approximate location of proposed public car park directional signage.
HAMILTON AV
LANARK AV
LEWINS ST
EARLWOOD AV
COLLINGWOOD AV
CONEY RD
LARKHALL AV
CLARKE ST
HOMER CA
LANE
WARDELL RD
WATKIN AV
HOCKING AV
BAKER ST
HOMERST
BANKS CA
BANKS RD
WILLIAM ST
JOY AV
ST JAMES AV
HARTILL-LAW AV
VIEW ST
ST GEORGES RD
MINNAMURRA AV
SUTTON AV
RICHARD AV
IBEX ST
SUNSET PL
FAGAN ST
Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Earlwood Town Centre Parking Supply and Management Recommendations
1:2,500
Final
JS10270
Figure 7.14
P4

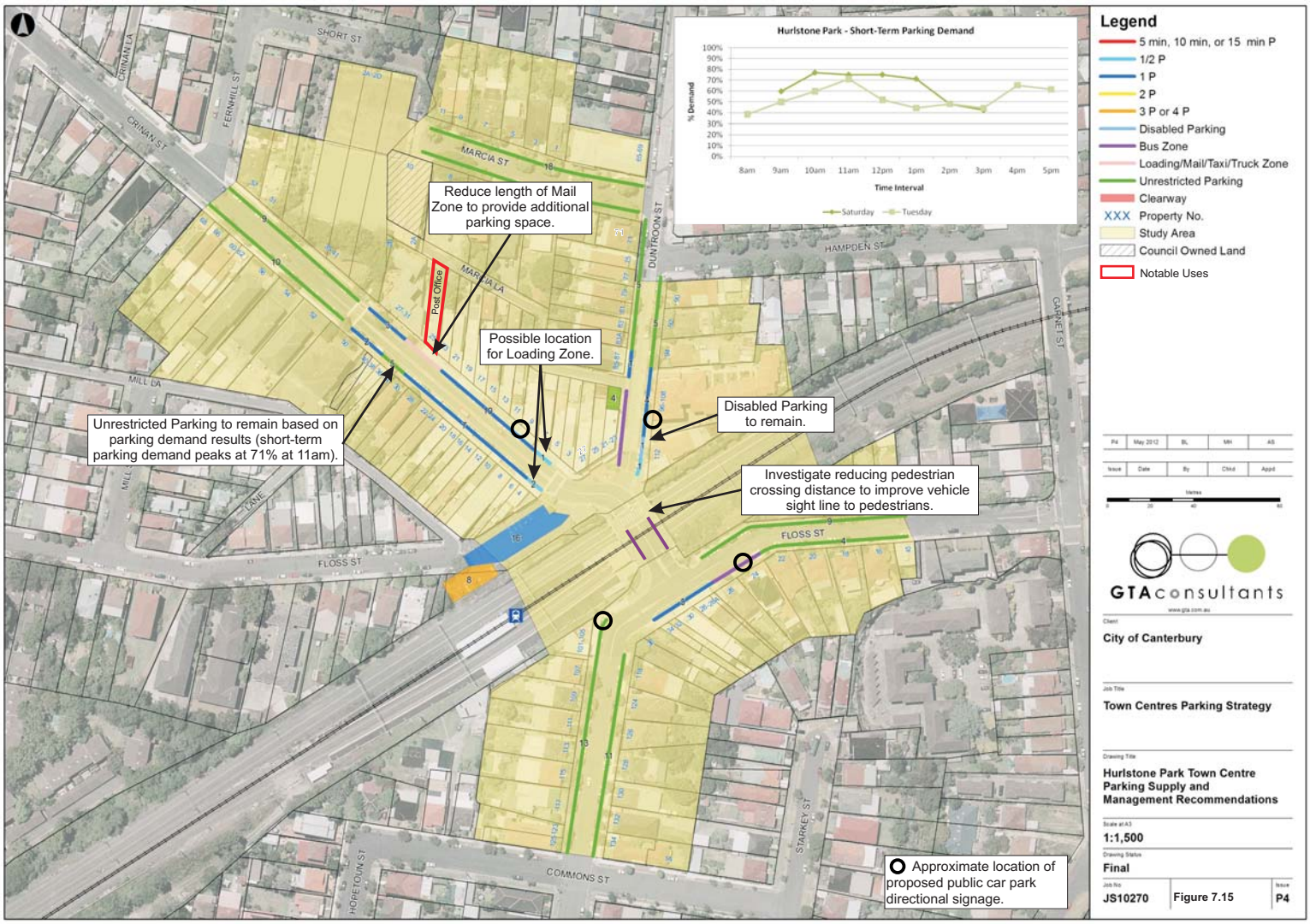
Hurlstone Park

Table 7.12 presents the issues determined through community consultation and site inspections along with recommendations for the Hurlstone Park town centre.

Table 7.12: Hurlstone Park – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Bus stop location near pedestrian crossing adjacent to the station entrance causes potential visibility issues for pedestrians when a bus is stopped.	Relocate bus stop as identified in the consultation. Road is approximately 12.5m wide so there is potential to indent the pedestrian crossing and not shift the bus stop.	Limited road layout to shift bus stop. Either side of the bridge the road curves and is not straight or flat. Indentation of kerbs would have to occur on a bridge. Structural issues will need further investigation.	Further investigation into Bus Stop location is required.
Existing Mail Zone is approximately 10m long and next to an existing crossover.	Reduce the length of Mail Zone to provide an additional parking space.	None identified.	Reduce the length of Mail Zone to 6-6.7m as per AS2890.5
5 Unrestricted spaces in the centre of time restricted parking. Adjacent to residential properties.	To introduce time restricted parking to provide more spaces for customers during the day.	Adjacent to residential properties so any change to restrictions may require a permit for affected properties.	Unrestricted parking to remain based on parking demand results (short-term parking demand peaks at 71% at 11am)
Limited loading opportunities for businesses on Crinan Street.	To create Loading Zone (during certain times of the day) Survey results indicate short term spaces peak at 71% at 11am.	May involve removing a car parking space.	Provide Loading Zone at the southern end of Crinan Street north of the railway station.

A summary of the management recommendations for the Hurlstone Park town centre are presented in Figure 7.15.


Hurlstone Park - Short-Term Parking Demand
% Demand
Time Interval
8am
9am
10am
11am
12pm
1pm
2pm
3pm
4pm
5pm
Saturday
Tuesday
Reduce length of Mail Zone to provide additional parking space.
Possible location for Loading Zone.
Unrestricted Parking to remain based on parking demand results (short-term parking demand peaks at 71% at 11am).
Disabled Parking to remain.
Investigate reducing pedestrian crossing distance to improve vehicle sight line to pedestrians.
Approximate location of proposed public car park directional signage.
Post Office
SHORT ST
CRINAN LA
CRINAN ST
FERNHILL ST
MARCIA ST
MARCIA LA
DUNTROON ST
HAMPDEN ST
GARNET ST
MILL LA
FLOSS ST
COMMONS ST
HOPETOUN ST
STARKEY ST
Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Hurlstone Park Town Centre Parking Supply and Management Recommendations
1:1,500
Final
JS10270
Figure 7.15
P4

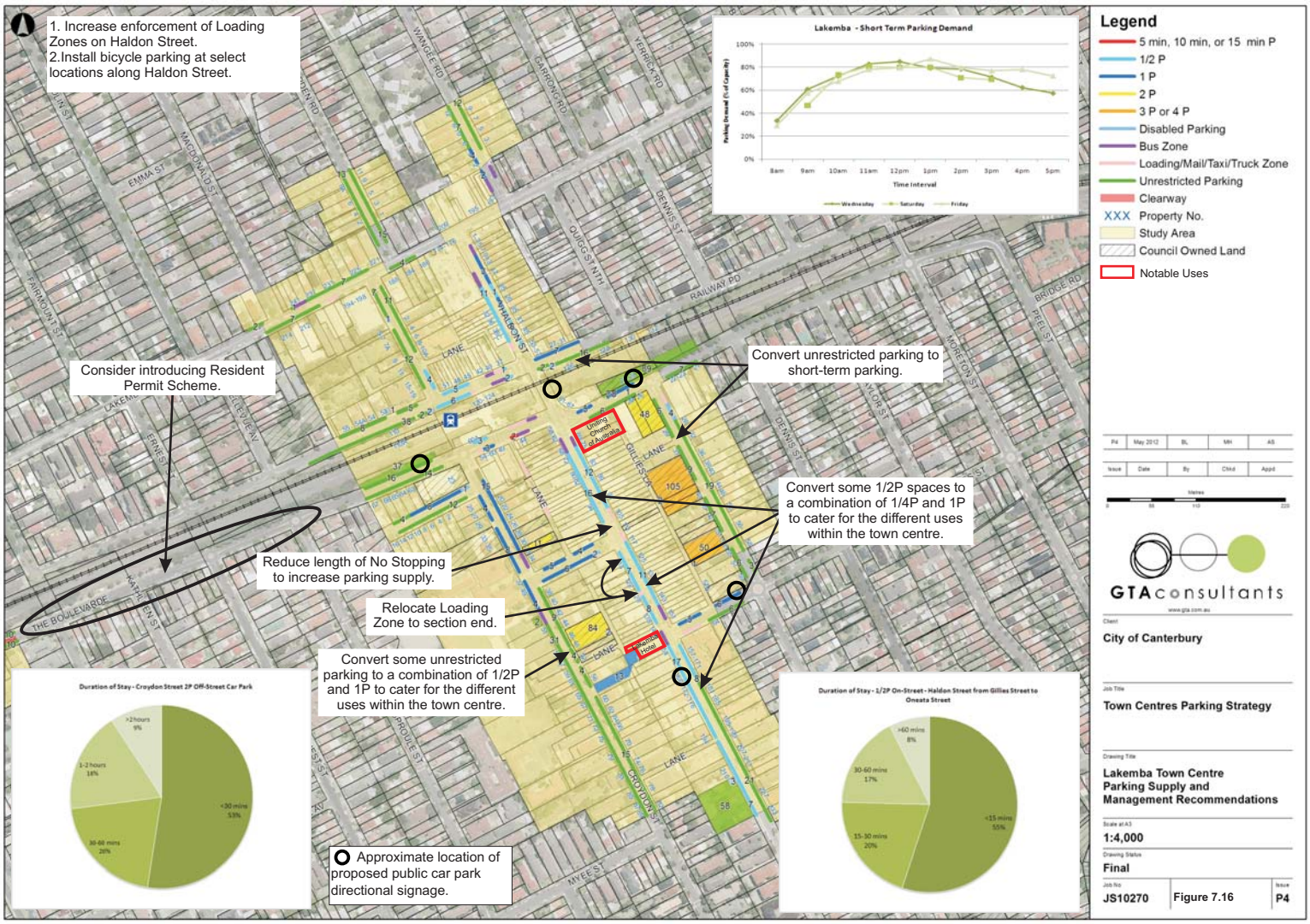
Lakemba

Table 7.13 presents the issues determined through community consultation and site inspections along with recommendations for the Lakemba town centre.

Table 7.13: Lakemba – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Need better signage to guide customers to large off-street car parks in Quigg Street.	Install additional signage.	Minor cost.	Install public car park directional signage.
Non-loading vehicles observed parking in Loading Zones on Haldon Street	Increase enforcement.	Limited rangers.	Increase Loading Zone enforcement through presence of a council ranger.
Bicycle parking not consistent across area or not provided. Evidence of insufficient parking with bicycle locked to the fence in locations.	Install additional bicycle parking.	Minor cost.	Install additional bicycle parking along Haldon Street.
Lack of loading zones on Haldon Street. Location of Loading Zone on the west side of Haldon Street is midblock makes access difficult.	Provide a consistent location for loading zones. Potential to increase Loading Zone spaces.	Finding correct locations for a Loading Zone to satisfy the most number of people may be difficult. Additional Loading Zone spaces will reduce parking supply on Haldon Street.	Move location of Loading Zone on the west side of Haldon Street (close to intersections or each end of module). Potential to increase number of Loading Zone spaces.
Large No Stopping Zone on Haldon St near the intersection Oneata Street.	Increase the amount of parking spaces. There seems to be no reason to ban parking in this area.	There may be history of the parking area which needs to be explained by Council.	Reduce length of No Stopping Zone to either increases parking supply or for relocation or addition of Loading Zone
Insufficient short-term parking in the town centre.	Convert some long-term parking to short-term parking.	More investigation required for which spaces to convert and the restriction time and length.	Convert some unrestricted parking to short-term parking.

A summary of the management recommendations for the Lakemba town centre are presented in Figure 7.16.


1. Increase enforcement of Loading Zones on Haldon Street.
2.Install bicycle parking at select locations along Haldon Street.
Consider introducing Resident Permit Scheme.
Convert unrestricted parking to short-term parking.
Convert some 1/2P spaces to a combination of 1/4P and 1P to cater for the different uses within the town centre.
Reduce length of No Stopping to increase parking supply.
Relocate Loading Zone to section end.
Convert some unrestricted parking to a combination of 1/2P and 1P to cater for the different uses within the town centre.
Approximate location of proposed public car park directional signage.
Lakemba - Short Term Parking Demand
Time Interval
Duration of Stay - Croydon Street 2P Off-Street Car Park
Duration of Stay - 1/2P On-Street - Haldon Street from Gillies Street to Oneata Street
Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Lakemba Town Centre Parking Supply and Management Recommendations
1:4,000
Final
JS10270
Figure 7.16
P4

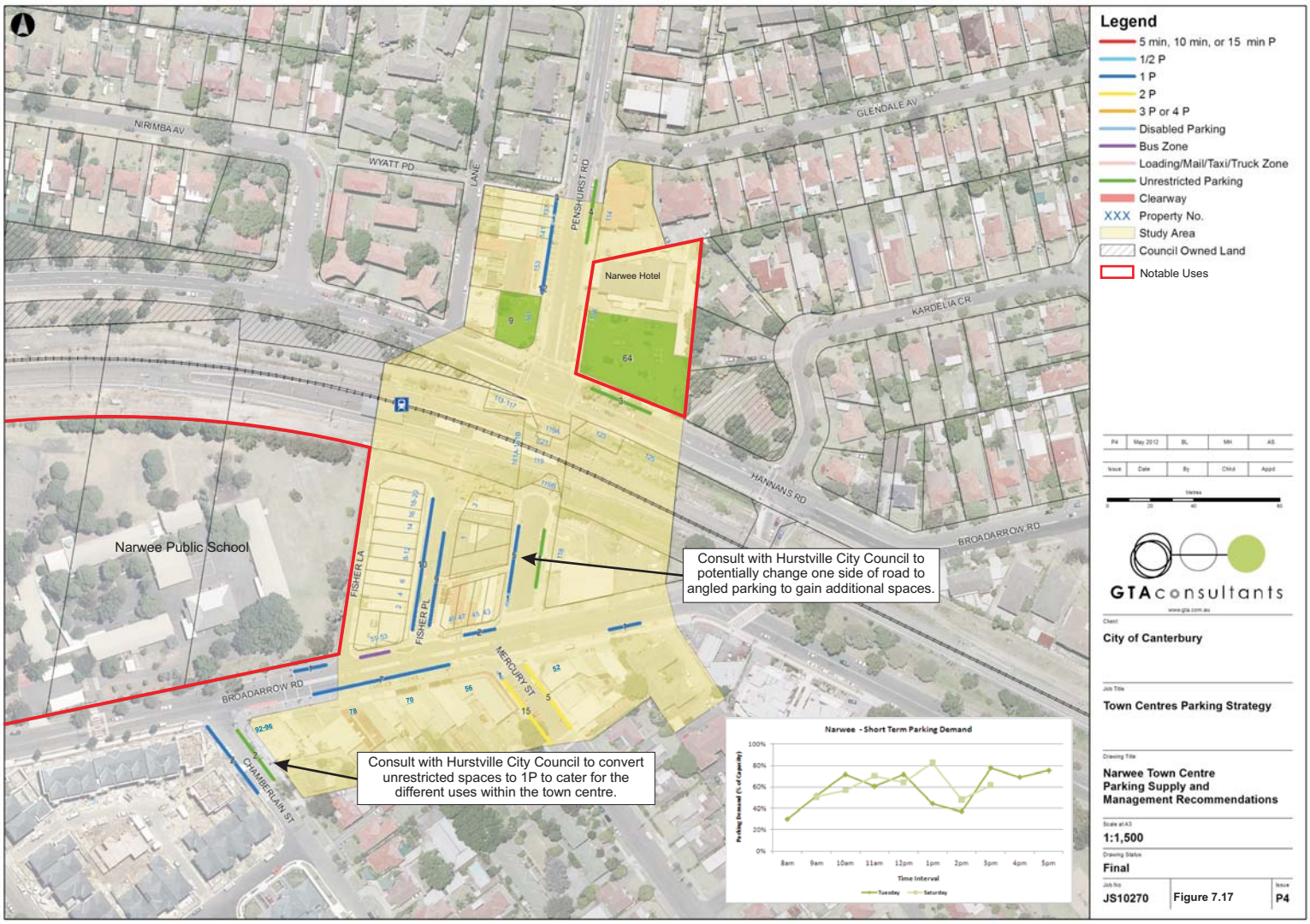
Narwee

Table 7.14 presents the issues determined through community consultation and site inspections along with recommendations for the Narwee town centre.

Table 7.14: Narwee – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Fisher Place is always full.	Increase enforcement to ensure vehicles are not overstaying restrictions.	Outside Canterbury Council area.	Canterbury City Council to consult with Hurstville City Council to ensure restrictions are enforced south of the railway line.
Insufficient use of space in Penshurst Street (south)	Alter the parking configuration to gain additional parking.	Small cost to reconfigure parking arrangement	Consult with Hurstville City Council to potentially change one side of the road to angle parking to increase supply. Potential gain of up to 8 spaces.
Unrestricted spaces on Chamberlain Street adjacent to the retail development.	Potential to increase short term supply in the town centre. Also ensures consistency in parking restrictions in centre	None identified.	Consult with Hurstville City Council to convert the unrestricted spaces to 1P during the day to cater for the different uses within the town centre.

A summary of the management recommendations for the Narwee town centre are presented in Figure 7.17.


Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
NIRIMBA AV
WYATT PD
LANE
PENSHURST RD
GLENDALE AV
Narwee Hotel
KARDELIA CR
HANNANS RD
BROADARROW RD
Narwee Public School
FISHER LA
FISHER PL
MERCURY ST
CHAMBERLAIN ST
Consult with Hurstville City Council to potentially change one side of road to angled parking to gain additional spaces.
Consult with Hurstville City Council to convert unrestricted spaces to 1P to cater for the different uses within the town centre.
Narwee - Short Term Parking Demand
Time Interval
Tuesday
Saturday
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Narwee Town Centre Parking Supply and Management Recommendations
1:1,500
Final
JS10270
Figure 7.17
P4

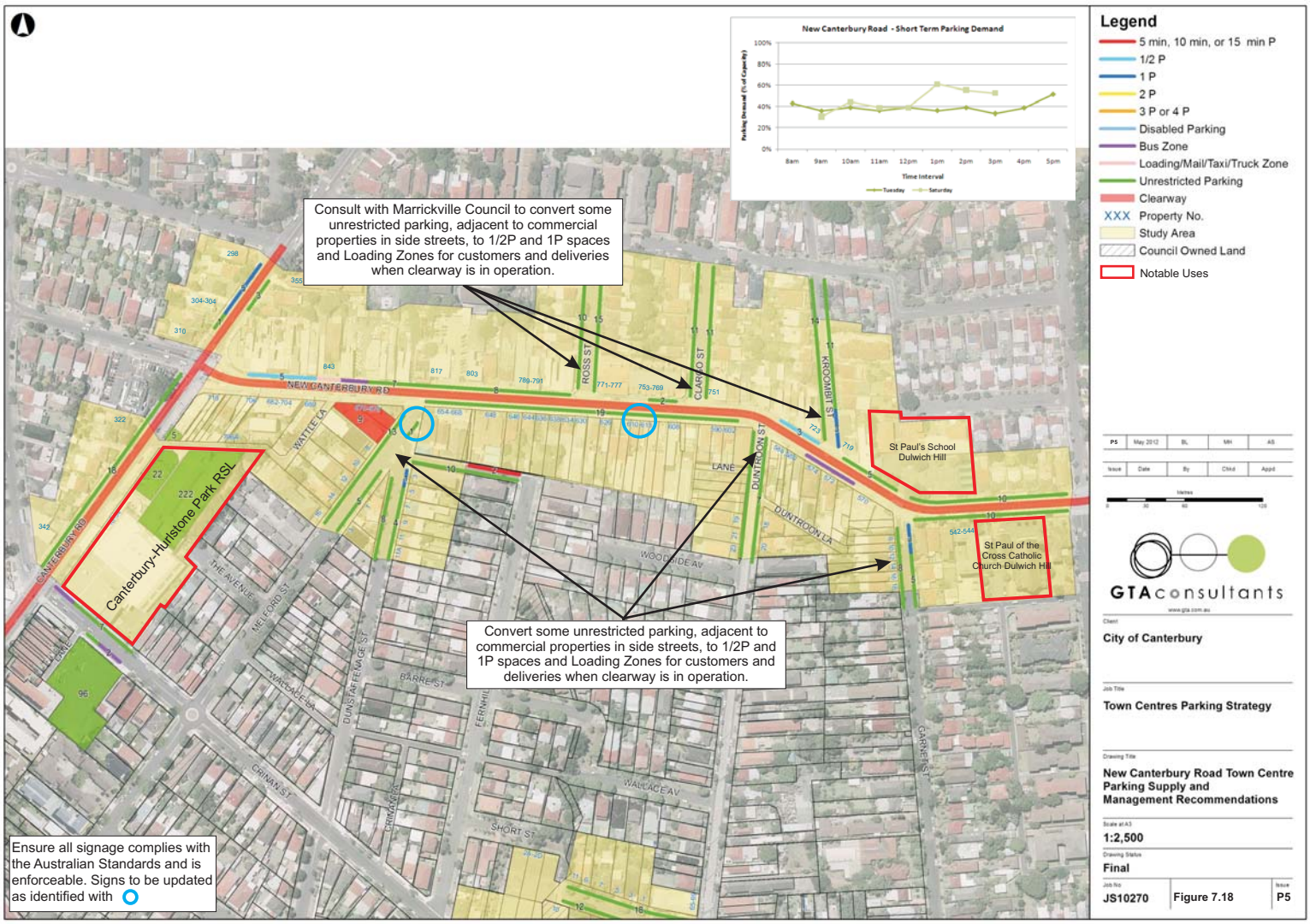
New Canterbury Road

Table 7.15 presents the issues determined through community consultation and site inspections along with recommendations for the New Canterbury Road town centre.

Table 7.15: New Canterbury Road – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
AM and PM clearways remove parking for long periods of the day. Limited short-term parking off New Canterbury Road.	To create more short-term spaces off New Canterbury Road on the side streets.	Removal of currently unrestricted spaces. Spaces north of New Canterbury Road are managed by Marrickville Council.	Convert some unrestricted parking on side streets along to short-term (1/2P or 1P) parking during clearways. Consult with Marrickville Council in relation to the spaces north of New Canterbury Road.
No loading zones on New Canterbury Road or in any side streets in close proximity to New Canterbury Road.	Create Loading Zones in side streets adjacent to commercial properties.	Removal of currently unrestricted spaces.	Convert unrestricted parking on side streets close to New Canterbury Road to Loading Zones.
Existing signage not to Australian Standards therefore is not enforceable.	Updated all signage to comply with the Australian Standards.	None identified.	Ensure all signage complies with the Australian Standards and is enforceable.

A summary of the management recommendations for the New Canterbury Road town centre are presented in Figure 7.18.


New Canterbury Road - Short Term Parking Demand
Time Interval
Tuesday
Saturday
Consult with Marrickville Council to convert some unrestricted parking, adjacent to commercial properties in side streets, to 1/2P and 1P spaces and Loading Zones for customers and deliveries when clearway is in operation.
Convert some unrestricted parking, adjacent to commercial properties in side streets, to 1/2P and 1P spaces and Loading Zones for customers and deliveries when clearway is in operation.
Ensure all signage complies with the Australian Standards and is enforceable. Signs to be updated as identified with
NEW CANTERBURY RD
ROSS ST
CLARKE ST
KROMBIT ST
DUNTROON ST
DUNTROON LA
LANE
WOODSIDE AV
WALLACE AV
SHORT ST
BARRET ST
GARNET ST
WATTLE LA
THE AVENUE
MELFORD ST
CANTERBURY RD
Canterbury-Hurlstone Park RSL
St Paul's School Dulwich Hill
St Paul of the Cross Catholic Church Dulwich Hill
Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
New Canterbury Road Town Centre Parking Supply and Management Recommendations
1:2,500
Final
JS10270
Figure 7.18
P5

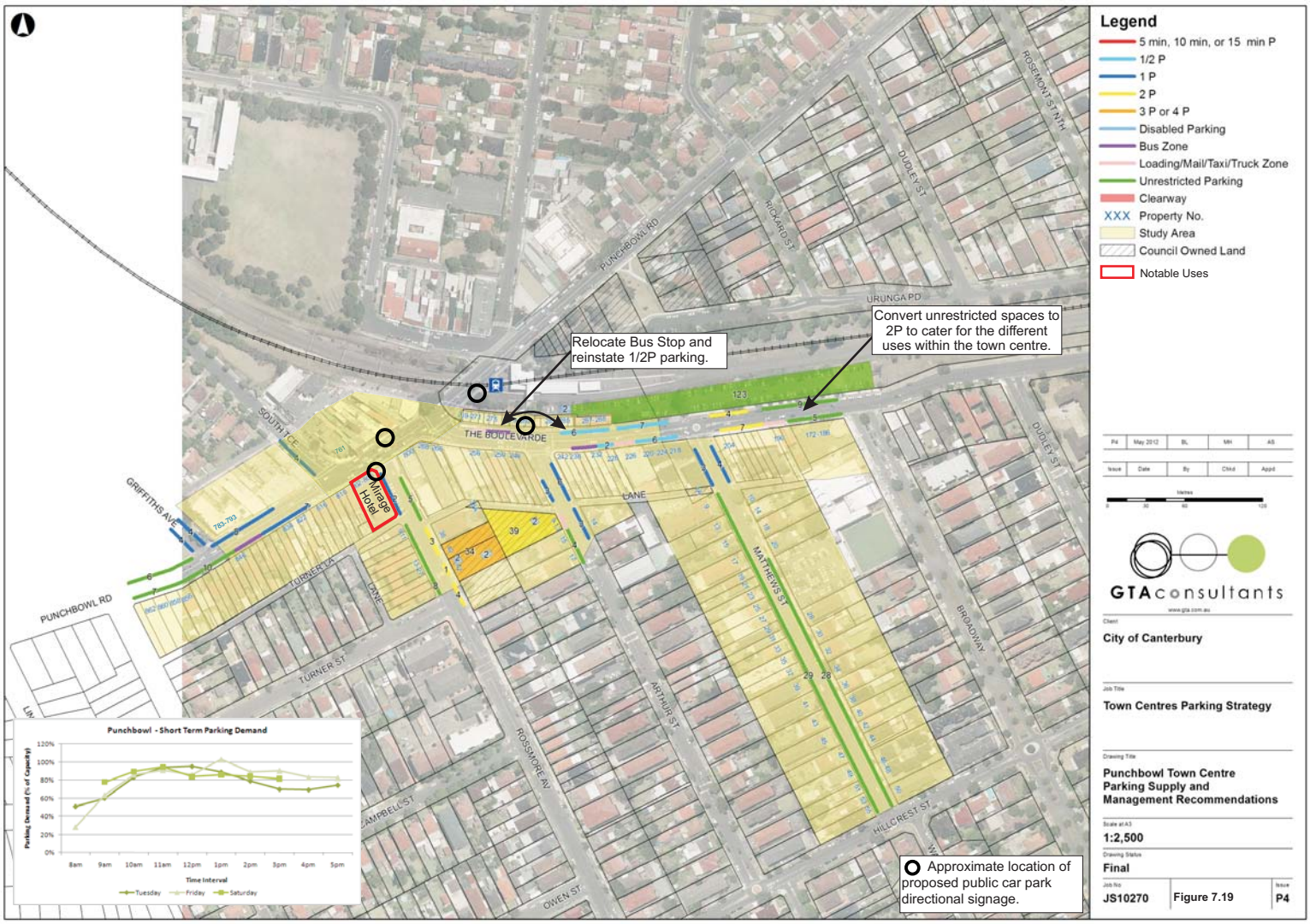
Punchbowl

Table 7.16 presents the issues determined through community consultation and site inspections along with recommendations for the Punchbowl town centre.

Table 7.16: Punchbowl – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
Capacity reached on Friday around 1pm as a result of local mosque.	To either increase supply or decrease demand.	Difficult to do either. Large costs associated with new car parking infrastructure	Further investigation required into possible construction of a multi-level car parking facility could also convert to some parking to short term drop off/pickup. Convert unrestricted spaces on The Boulevard to 2P parking.
Bus stop on The Boulevard is difficult to access.	Relocate bus stop to a location that is easier to access.	Would involve relocation of public car parking spaces.	Relocate existing bus stop immediately east of signalised pedestrian crossing.

A summary of the management recommendations for the Punchbowl town centre are presented in Figure 7.19.


Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
Relocate Bus Stop and reinstate 1/2P parking.
Convert unrestricted spaces to 2P to cater for the different uses within the town centre.
Mirage Hotel
THE BOULEVARDE
PUNCHBOWL RD
URUNGA PD
SOUTH ST
GRIFFITHS AVE
TORRENS LA
LANE
TURNER ST
ROSSMORE AV
ARTHUR ST
MATTHEWS ST
BROADWAY
DUDLEY ST
ROSEMONT ST NTH
HILLCREST ST
OWEN ST
CAMPBELL ST
Punchbowl - Short Term Parking Demand
Parking Demand (% of Capacity)
Time Interval
Tuesday
Friday
Saturday
Approximate location of proposed public car park directional signage.
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Punchbowl Town Centre Parking Supply and Management Recommendations
1:2,500
Final
JS10270
Figure 7.19
P4

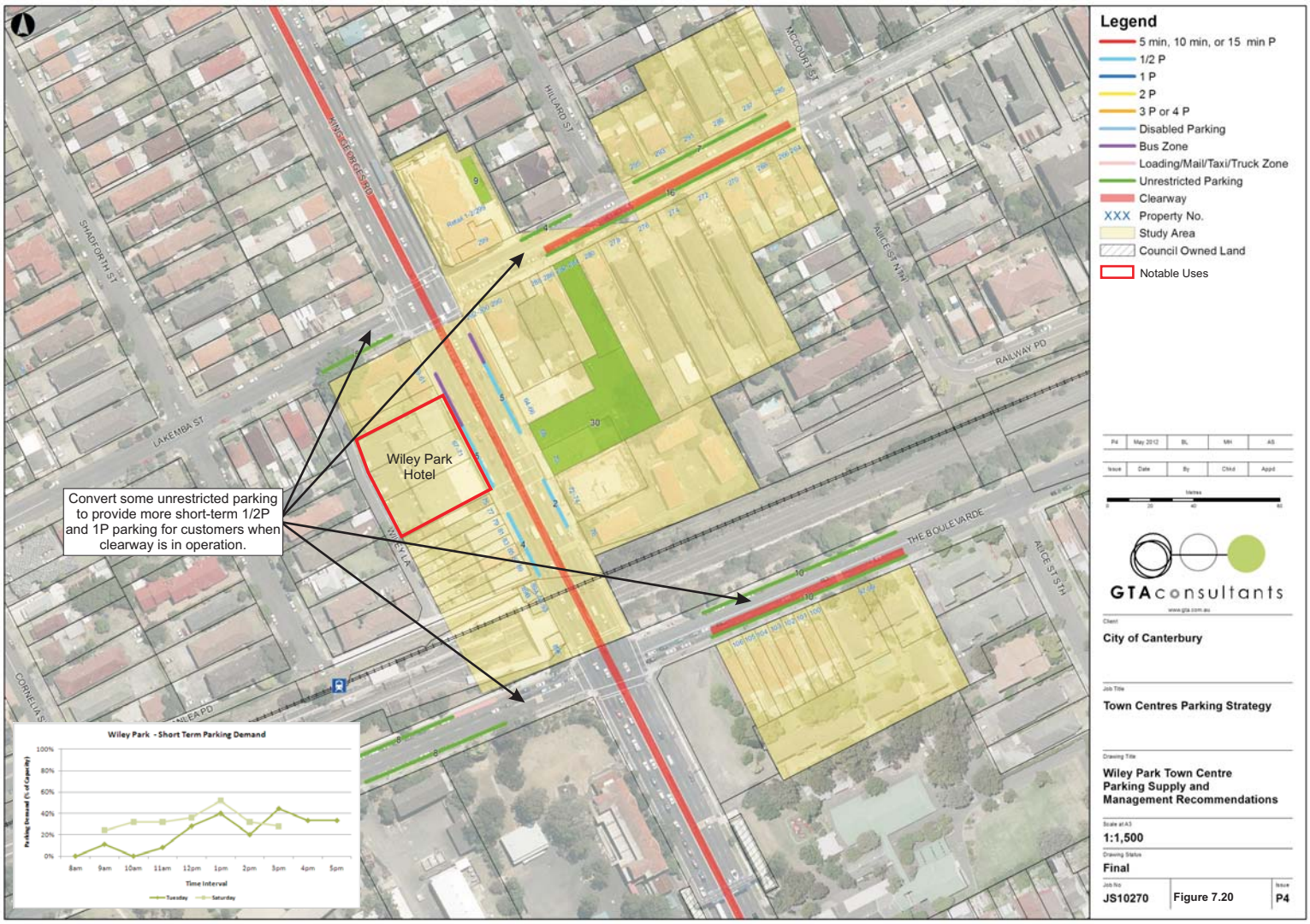
Wiley Park

Table 7.17 presents the issues determined through community consultation and site inspections along with recommendations for the Wiley Park town centre.

Table 7.17: Wiley Park – Strategies to Manage Existing Car Parking Demands

Issues	Opportunities	Constraints	Recommendations
King Georges Road bisects town centre separating the two sides, despite the pedestrian crossing.	Note only.	Note only.	No action.
AM and PM clearways remove short-term parking for long periods of the day on both sides.	To convert some unrestricted parking on Lakemba Street and The Boulevard to short term parking	Residential Properties along Lakemba Street reduce area that can be converted to short-term supply without the need for introduction of residential parking scheme	To provide short-term (1/2P and 1P) parking on The Boulevard near King Georges Road on railway and school frontage on to replace the short-term spaces lost in the clearway.

A summary of the management recommendations for the Wiley Park town centre are presented in Figure 7.20.


Legend
5 min, 10 min, or 15 min P
1/2 P
1 P
2 P
3 P or 4 P
Disabled Parking
Bus Zone
Loading/Mail/Taxi/Truck Zone
Unrestricted Parking
Clearway
XXX Property No.
Study Area
Council Owned Land
Notable Uses
Wiley Park Hotel
Convert some unrestricted parking to provide more short-term 1/2P and 1P parking for customers when clearway is in operation.
HILLARD ST
McCOURT ST
SHADFORTH ST
LAKEMBA ST
RAILWAY PD
THE BOULEVARDE
ALICE ST N
Wiley Park - Short Term Parking Demand
Time Interval
Tuesday
Saturday
GTAconsultants
City of Canterbury
Town Centres Parking Strategy
Wiley Park Town Centre Parking Supply and Management Recommendations
1:1,500
Final
JS10270
Figure 7.20
P4

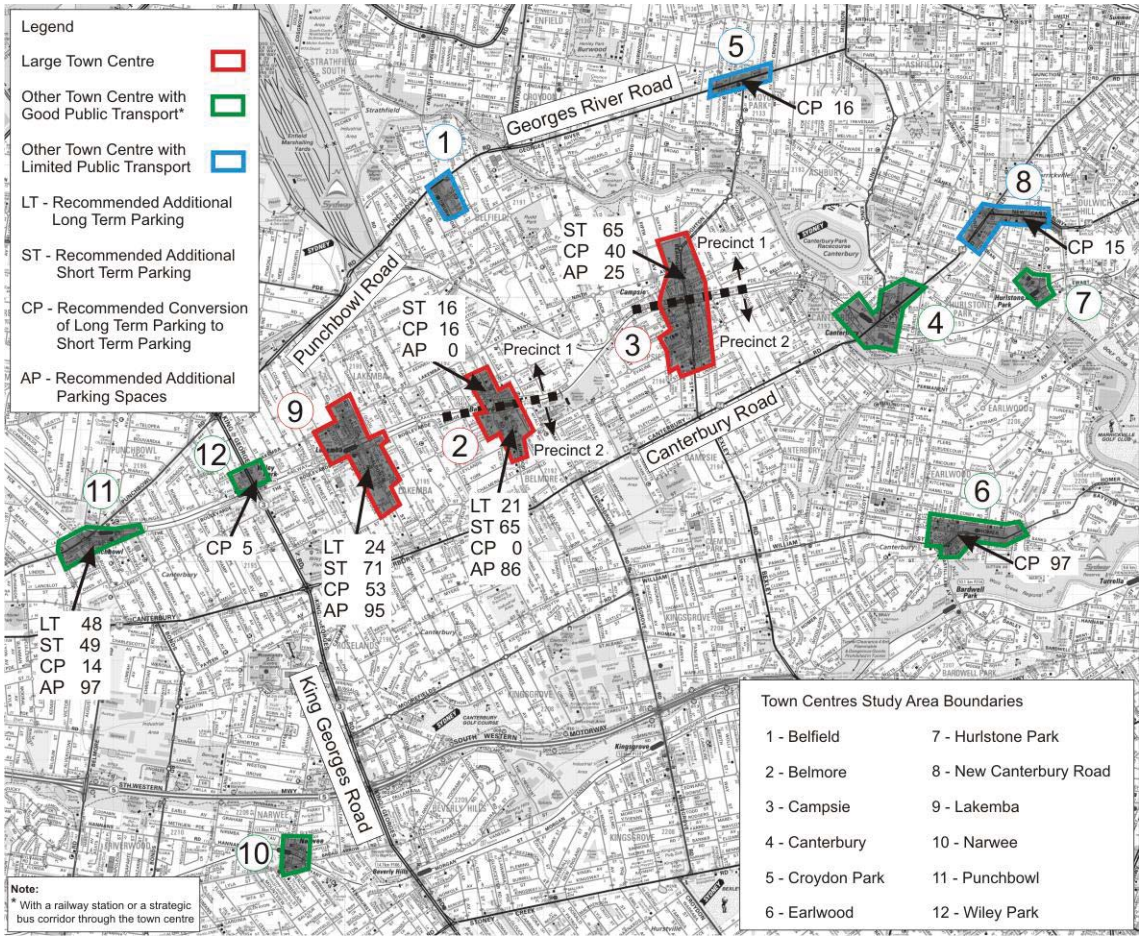
7.4 Strategies to Manage Future Car Parking

Section 6.3 assessed the potential future parking requirements of the town centres based on the expected future increase in floor area for each centre.

Figure 7.21 has been reproduced from Section 6.3 presenting the town centres which GTA Consultants expects will require additional car parking in the future. The town centres identified as requiring additional parking include:

- 2 - Belmore
- 3 - Campsie
- 4 - Canterbury
- 9 - Lakemba
- 11 - Punchbowl.

Figure 7.21: Approximate Additional Parking Supply Recommendations



7.4.1 Management of Future Commercial Parking Demands

Car parking supply could be provided in a number of ways to satisfy the future anticipated car parking demands including:

i Rely on existing car parking vacancies within each town centre

ii Create additional public car parking facilities
iii Provide car parking on-site as part of any new development.

Each of these options is discussed in the following sections.

However before exploring each of these options, some consideration should be given to the preferred type of parking to accommodate the different parking users.

Long term parking for retail and commercial / office staff can, beyond some convenient minimum amount, be located in public car parks if these exist. Otherwise these need to be accommodated on-site. In general, long term parking should not be accommodated on-street.

Visitor (short-term) parking can either be accommodated on-site, on-street or in car parking facilities. Visitor parking is by its nature, short term and characteristically occurs at different times for different uses. In these circumstances, a clear opportunity exists to share the same spaces for visitors of different uses which implies that it is inefficient to provide visitor spaces on-site. In summary, visitor parking is best provided either on-street or in a public car parking facility. The exception is where a large scale retail development with primarily customer parking demands. These developments, such as a supermarket, will look to provide their parking on-site. Small and medium developments are suitable to utilise existing on-street vacancies should they exist.

Given the above, it is appropriate to assess the car parking supply options by reference to the capacity and suitability of accommodating car parking on-street first, opportunities for car parking stations secondly and then directing the remainder of the demand to be accommodated on site.

Utilising Existing Car Parking Vacancies

Given the cost of providing additional car parking, it is important to maximise the use of the existing car parking supply within each of the town centres. In particular, on-street car parking represents a parking resource which should not be ignored when designing a car parking system. This parking often represents the most proximate and attractive parking for visitors to developments and can effectively and efficiently be shared between multiple land uses, particularly if land uses have peak parking requirements occurring at different times of the day.

The use of on-street car parking acts to calm traffic speeds and adds to the vitality of the area and to not allow the use of this car parking in satisfying a development's car parking generation calculation, will often result in an underutilisation of the car parking provision which is provided on-site.

As such, in establishing the most appropriate way to cater for the future car parking demands some reliance on on-street and public off-street parking should be considered.

It is recommended that a developer be able to utilise suitable vacancies in the vicinity of their site to justify a reduction in parking provided on-site. To formalise this, it is recommended that the Canterbury DCP include text to this affect, as outlined later in Section 7.4.1.

Providing New Public Car Park Facilities

Based on the information presented in Table 6.2 and the centres that will require additional parking, we have identified a number of possible locations where additional car parking could be provided. The possible locations are set out in the following sections.

Based on an average of 30sqm GFA per car parking space (which accounts for access locations, ramps, columns and dead space), the area of each proposed car park location can be used to provide an estimate of the additional car parking spaces.

In selecting locations for additional car parking, GTA Consultants has considered a number of criteria as follows:

- the amount of car parking required in each town centre
- the location of future development within each centre
- accessibility to the retail centre (by car and on foot)
- practical size and feasibility of providing car parking on each site
- ownership of the site (Council owned land assessed first, followed by suitable private sites, preferably owned by a single family or business).

Cost Estimates

Indicative cost estimates have also been prepared for the purpose of providing costs of each recommendation to assist in the prioritisation of each option. All cost estimates in the section are for broad level or initial feasibility planning only and must not be relied upon for quoting, budgeting or construction purposes. The costs have been derived from the estimated building cost rates presented in Rawlinsons publication 'Australian Construction Handbook'[6] using the rates per space. The costs by type of car park, as presented in Rawlinsons publication, are as follows:

- Underground – including reinforced concrete construction, deck over, mechanical ventilation, and fire sprinklers, landscaping to top of deck; minimal facilities, no lift.
- Open Parking Area (at grade) – including bitumen paving, stormwater drainage, minimal lighting, and some landscaping.
- Parking Station (multi-level aboveground) – including reinforced concrete construction open sides, minimal toilet facilities; no lift, ventilation or fire sprinklers.

The costs range as presented in the Rawlinsons publication is as follows:

- Underground – $47,700 to $51,400 per space per level
- Open Parking Area (at grade) – $2,820 to $3,040 per space
- Parking Station (multi-level aboveground) – $12,200 to $13,200 per space for 2 storey or $14,200 to $15,300 per space for 3 storey.

It should also be noted that the costs provided in Rawlinsons do not take account of costs associated with items such as land acquisition, legal, and administrative costs but are based on physical construction costs only. Depending on the level of these further requirements will further influence the final calculated car parking space costs.

A value of approximately $15,000 has been adopted (based on advice from the City of Canterbury) for demolition should the proposed site contain a dwelling (house).

[6] Rawlinsons, *Australian Construction Handbook* 2010

Belmore

Belmore has been identified as requiring an additional 16 spaces (all short-term) in Precinct 1 and 86 spaces (21 long-term and 65 short-term) in Precinct 2. Figure 7.22 to Figure 7.23 show two possible locations to cater for this expected additional parking.

Figure 7.22: Possible Additional Parking Location Belmore Precinct 1 or Precinct 2

Figure 7.23: Possible Additional Parking Location Belmore Precinct 2

Figure 7.22 is an extension to the existing 2P car park leased from RailCorp. Figure 7.23 is on private land and would require an agreement with the land owner regarding any design and future car parking.

The indicative costs associated with the construction of these potential car parks are as follows:

- Figure 7.22 – the cost for the extension of the existing at grade car park is in the range of $169,200 and $182,400.
- Figure 7.23 – the cost for a two level car park ranges from $915,000 and $990,000 for an aboveground parking station and $3,577,500 and $3,855,000 per level for an underground car park.

These costs do not include associated demolition costs.

Campsie

Campsie has been identified as requiring an additional 65 short-term spaces in Precinct 1 and no additional spaces in Precinct 2. Two potential sites, shown in Figure 7.24 and Figure 7.25 have been identified in Precinct 1.

As GTA Consultants understands, Council are considering a proposal to convert Anzac Mall, identified in Figure 7.26, to include a roadway providing 16 additional car parking spaces. Anglo Road was converted into Anzac Mall in 1994 however *the mall does not contain the commercial vitality and vibrancy that is present throughout Beamish Street, e.g. there are a number of vacant shops and the area is perceived to be unsafe at night*.

Figure 7.24: Possible Additional Parking Location Campsie Precinct 1

Figure 7.25: Possible Additional Parking Location Campsie Precinct 1

Figure 7.26: Possible Additional Parking Location Campsie Precinct 2

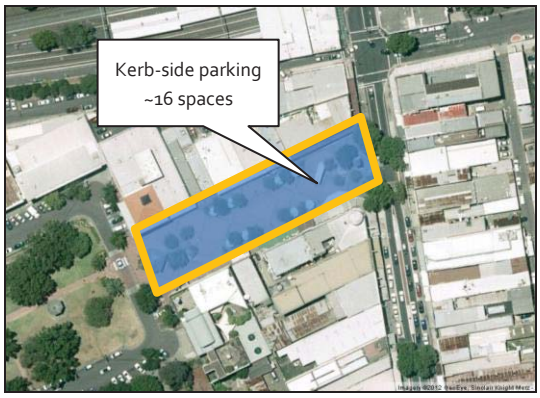


Figure 7.24 shows that based on the area of the site, approximately 30 car parking spaces could be provided on one level. Figure 7.25 shows an extension of existing 90-degree kerbside parking on RailCorp land which could generate an extra 16 spaces.

The proposed addition of a roadway through Anzac Mall as shown in Figure 7.26 would provide approximately 16 kerbside car parking spaces. Due to the close proximity of Anzac Mall to Precinct 1, the additional spaces could assist in accommodating the additional car parking demand in Precinct 1.

The indicative costs associated with the construction of these car parking potential car parks are as follows:

- Figure 7.24: the cost for an at grade car park ranges from $109,600 and $116,200. These costs include $30,000 in demolition costs.
- Figure 7.25: the cost for extending the commuter parking ranges from $45,120 and $48,640. These are based on the rate per space for an at-grade car park.
- Figure 7.26: The Anzac Mall Place Management Strategy report dated 16 August 2011 indicates a cost in the order of $1.86M for this project. If this project proceeds then the cost of this project could be incorporated into the new Section 94 contributions plan for Campsie as it is a project that would increase car parking supply for the centre. Council needs to apportion the percentage of costs it considers appropriate to the Section 94 contributions plan for Campsie.

Canterbury

The City of Canterbury has advised that major redevelopment is proposed for the Canterbury Town Centre, particularly south of the Railway Line. The Town Centre is subject to a detailed Master Plan and a Public Domain Strategy (which has yet to be finalised). The Master Plan does not have any provision for any privately owned land to be used for public parking in Canterbury and it is intended that all future parking associated with the major developments is provided on-site. The Public Domain Strategy will result in the provision of additional on-street parking in the Town Centre to support the on-site car parking. Accordingly it is not proposed for sites to be identified for future public parking needs in this Town Centre.

It is recommended that Council prepare a car parking strategy for Canterbury as part of the Town Centre redevelopment and planning. It is expected that the strategy would primarily set out an assessment of how the on-street car parking would be managed, including consideration of the following:

- how much short-term parking to be provided on-street
- the type of users that the new on-street car parking spaces would cater for
- how much commuter parking would be provided in the vicinity of the station
- whether any resident permits will be issued .

Lakemba

Lakemba has been identified as requiring an additional 95 spaces (24 long-term and 71 short-term). Figure 7.27 provides a possible location for additional car parking.

Figure 7.27: Possible Additional Parking Location Lakemba

Figure 7.27 is a combination of Council and private land. The private land would have to be purchased to enable the Council car parks to be extended. Alternatively, an additional level could be constructed above the existing Council car park. Further investigation is required in respect of the associated costs and benefits.

The indicative costs, including associated demolition costs, associated with the construction of the potential car park in Figure 7.27 are as follows:

- Extension of existing car park to include an additional 41 spaces is in the approximate range of $140,620 and $149,640; or
- the cost for a two level car park ranges from approximately $1,550,000 and $1,675,000 for an aboveground parking station.

Council currently own 28 Croydon Street which was previously purchased to provide future car parking for the Lakemba town centre. It is recommended that council consolidate its interests around the existing larger car park at 46-52 Croydon Street to maximise efficiency. To this end, 28 Croydon Street is no longer required for future car parking.

Punchbowl

Punchbowl has been identified as requiring an additional 95 spaces (48 long-term and 49 short-term). Figure 7.28 to Figure 7.29 provide three possible locations for additional car parking.

Figure 7.28: Possible Additional Parking Location Punchbowl

Figure 7.29: Possible Additional Parking Location Punchbowl

Figure 7.28 would require the purchase of additional land to enable the existing car park to be expanded. Figure 7.29 is an extension of the existing railway station car park and would require negotiations with RailCorp which may place restrictions on the use of the land.

The indicative costs associated with the construction of these potential car parks are as follows:

- Figure 7.28 – Extension of existing car park to include an additional 54 spaces is in the approximate range of $172,280 and $184,160; or for a two level parking station in the range of $1,179,000 to $1,274,000 (these costs include $30,000 in demolition costs).
- Figure 7.29 – Extension of existing car park to include an additional 65 spaces is in the range of $183,300 and $197,600.

Provide Car Parking On-Site

It is not always appropriate to allow a development to utilise on-street car parking to cater for its car parking demands or a development may want to provide all of its car parking on-site for economic purposes. In such cases, on-site car parking can be provided to cater for some or all site users. In many of the town centres within the Canterbury LGA, lot sizes are too small to cater for on-site parking, especially along the main shopping strips where buildings have multiple uses and in multi-level developments.

If on-site parking is to be for private use only, it may not always represent the most efficient provision of car parking, i.e. does not allow for the sharing of short term parking between multiple users, however barring urban design and access constraints, on-site parking is suitable to cater for all demands.

On-site parking is mainly applicable for medium-large multi-purpose developments where underground or podium parking is an option. For such developments, appropriate levels of on-site parking should be provided for commercial uses within the building for all user types to reduce the reliance on off-site parking which is required to cater for smaller commercial developments.

Where a developer is proposing additional public car parking to cater for a use such as a supermarket and additional public car parking is expected to be required in the future, Council should consider working with the developer to increase the size of the car park to cater for the development requirements as well as the anticipated future public car parking requirements.

7.4.2 Recommendation on How to Provide Future Car Parking

Based on the above discussion regarding methods of how future car parking could be provided, the following recommendations are provided to assist Council to ensure sufficient car parking is provided for each town centre in the future:

- Council ensure that minimum car parking requirements for new floor areas or changes of use within each town centre are provided subject to appropriate justification of lower rates.
- The developer of each site has the opportunity to justify reduced on-site and overall car parking requirements based on the following:
    - The availability of suitable car parking in the proximity of the development.
    - The sharing of car spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces.
    - Any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement.
    - Preparation, implementation and ongoing review of a Green Travel Plan.
    - An empirical assessment of car parking demand.
    - Any other relevant consideration.

In this regard the developer should be required to submit a Transport Impact Assessment prepared by a suitably qualified person or company that provides clear justification for any car parking reduction on-site.

- The developer of each site has the option to provide all parking on-site for exclusive use of their development although it is preferred that visitor and short-term car parking is provided on-street or in public car parks where such facilities exists or are planned to be constructed.
- Where the developer does not have sufficient room on their site or would prefer to have parking located off-site in a new public car park:
    - Council is responsible for identifying a suitable site for additional public car parking (this would only apply in centres that GTA Consultants has identified as requiring additional public car parking in the future – Belmore, Campsie, Lakemba and Punchbowl).
    - Council would be required to purchase the property and undertake a detailed costing assessment of the amount per space to construct the car park.
    - Council can decide whether to construct the car park immediately and collect funds in the future to alleviate a car parking in a town centre or collect funds over time and when sufficient funds have been collected, construct the car park.
    - The developer would have to pay Council for each space of the total car parking requirement that they cannot provide on-site.
- Where a developer proposes to construct a large car park on-site for a short-term use, such as a supermarket for example, if additional public car parking is required in the future, Council should work with the developer to provide a car park of sufficient size to cater for the development as well as the car parking required to satisfy the demand for the development.

7.5 Management of Future Residential Demands

It is recommended that future resident demands be provided on-site and no parking permits be made available for any dwellings where there is more than one dwelling on a lot.

It is recommended that visitor car parking be provided in the following priority order:

i On-street (where suitable spaces can be justified)
ii In public car parks (where suitable spaces can be justified or paid for by contribution to Council)
iii On-site.

7.6 Other Considerations

In addition to the recommendations made within this section, GTA Consultants recommends that Council consider the following as part of future management of town centres across the LGA.

Paid Parking

Future growth of town centres may warrant the introduction of paid parking to manage parking demands and to control vehicles overstaying restrictions and to maximise efficiency of turnover. To this end, it is recommended that Council further investigate the option to introduce paid parking where town centres are operating at or above theoretical capacity. This would mainly be confined to the main strip within a number of centres although may also be suitable for some long-term car parking spaces within certain centres, reflecting the value of those spaces. Should any centres be considered for introduction of paid parking, consideration should be given to the likelihood of customers driving to another centre in close proximity that does not have paid parking.

Permit parking schemes

Parking permits are used to exempt resident, business and visitor vehicles from some kerbside time restrictions and where they may exist, parking fees. This ensures that the parking controls needed to protect local residents from commuter parking (eg by nearby office workers or shoppers), do not unreasonably affect residents[7]. GTA Consultants has identified a number of locations where consideration should be given to the introduction of resident parking schemes. It is recommended that the City of Canterbury investigate the opportunity to introduce resident permit schemes as requests are made by residents in situations where there are commuters or employees parking all day and this occurrence is deemed to adversely affect the amenity of function of the street. It is also noted however that should a resident parking scheme be introduced into a street, in accordance with RMS guidelines, not all residents may be eligible for permits.

[7] cityofsydney.nsw.gov.au/AboutSydney/ParkingAndTransport/ParkingSchemes/

8. Review of DCP Parking Rates

8.1 Introduction

The current council Car Parking DCP (DCP20, adopted in 2009) provides different car parking rates for a range of commercial as well as residential land uses. This is common practice and provides flexibility within the planning system and ensures that appropriate car parking is provided on a case by case basis.

The amount of car parking that developers provide for new development, in many cases, is sourced directly from DCP20 and it is the document that Council planners refer to when assessing Development Applications. The works undertaken as part of this study have identified the current demand for a range of uses through the use of car parking models for each town centre. The models have taken into account the temporal profile and sharing of uses within each town centre to determine specific car parking rates.

The following sections provide a review of the existing commercial and residential land use DCP car parking rates.

8.2 DCP Land Uses

Determination of appropriate car parking rates for the town centres across the City of Canterbury has involved consideration of three basic types of land uses and subsequently, car parking rates as follows:

- Dominant land uses – These uses typically make up a majority of land use types within all the town centres and can have relatively accurate generic parking rates established.
- Minor land uses – These rates make up a lesser extent of the overall parking demand within most town centres and the development of rates for these uses can be less accurate.
- Other land uses – These land uses cannot appropriately be allocated a car parking rate and these should be established by first principles or surveys of similar development types.

A summary of the dominant, minor and other commercial land uses for all the Canterbury town centres are provided in Table 8.1.

Table 8.1: Dominant, Minor and Other Land Uses within the Canterbury LGA Town Centres

Land Use	Land Use Type		
	Dominant	Minor	Other
Office	■		
Retail Shop	■		
Hotel/Club		■	
Restaurant		■	
Restaurant (Drive-Through Take-Away)			■
Child Care Centre			■
Medical Centre			■
Light Industry		■	
Service Station			■
Community Facility			■
Place of Worship			■
Entertainment Facility			■
Motel			■
Educational Facility		■	
Recreational Facility			■
Primary School		■	

Table 8.1 shows that there are as two dominant land uses and five minor land uses with the remainder of uses considered as 'other'. Recommendations for changes to car parking rates have focused on the dominant land uses -office and retail- as there was limited survey data available for the minor and other land uses in each town centre.

8.3 Review and Comparison of Commercial (Office and Retail) Car Parking Rates

The existing car parking rates in the Canterbury DCP for the dominant land uses (office and retail) have been compared against a number of other Councils across Sydney as well as being referenced against other industry standards. This comparison is provided in Table 8.2.

Table 8.2: Comparison of Commercial Office and Retail Car Parking Rates

Source		Area	Office (spaces / 100sqm GFA)	Small Retail <120sqm GFA (spaces per 100sqm GFA)	Medium Retail 120sqm to 1000sqm - (spaces / 100sqm GFA)	Large Retail > 1000sqm GFA (spaces per 100sqm GFA)	General Retail (spaces per 100sqm GFA)
RTA Guide to Traffic Engineering Developments			2.5				3.83 [6]
Local Council	Canterbury City Council		2.5	2.5	3.33	4.55	2.5 to 4.55
	Ashfield Council	Entire LGA	2.5				2.5 [1]
	Bankstown City Council	Bankstown CBD	2.5				2.5 [2]
		Other Town Centres	2.5				
	Burwood Council	Burwood Town Centre	2				2
		Other Areas	2.5				2.5
	Marrickville Council	Parking Area 1	1	1 [4]		15 spaces + 2.86	
		Parking Area 2	1.25	1.25 [4]		20 spaces + 3.33	
		Parking Area 3	1.67	2 [4]		29 spaces + 5	
	Willoughby City Council	Outside Railway Precincts and Major PT Corridors	1.67				4
		Within Railway Precincts and Major PT Corridors	0.91				
		Chatswood Commercial Zone	0.5				
	North Sydney Council [5]	North Sydney, St Leonards & Milsons Point	0.25				
		Crows Nest, Neutral Bay & Cremorne	1.67				
	Penrith City Council	Penrith & St Marys	2.5				3.84 sp / 100sqm Net Retail Floor Area
		Others	2.5				3.84 sp / 100sqm Net Retail Floor Area
	Minimum		**0.25**	**1**	**3.33**	**2.86**	
	15th Percentile		**0.95**	**1.11**		**3.07**	
	Average		**1.82**	**1.69**		**3.94**	
	85% Percentile		**2.50**	**2.28**		**4.80**	
	Maximum		**2.5**	**2.5**		**5**	
Calibrated Model	Minimum		1.60	1.47	1.94	0.73	
	Maximum		1.77	2.51	3.23	3.70	

[1] plus 1 space if resident manager or caretaker. For local "corner" shops, parking will be assessed on a case-by-case basis.
[2] for developments less than 4000 m2 GFA. A parking survey should be carried out for developments larger than 4000 m2 GFA. Half of Total GFA is provided on-site with the remainder via Section 94 contributions to Council to provide public car
[4] Up to 500sqm GFA
[5] Maximum Parking Rates
[6] Specialty Shops and Secondary Retail

Table 8.2 indicates that the existing car parking rate in the Canterbury DCP for the office land use is comparable to many DCPs across Sydney. The GTA Consultants calibrated model car parking rates however, are lower than the Canterbury DCP rates which suggest that in general, an excess of car parking is currently being provided. It should be noted that the peak day for many centres was a Saturday and as such office uses were not analysed in these cases.

Table 8.2 indicates that the existing car parking rates for the retail land use within the Canterbury DCP are higher than similar Councils across Sydney and the GTA Consultants calibrated model rates. Further discussion regarding the recommended future parking rates are set out in Section 8.5.

8.4 Review and Comparison of Residential Car Parking Rates

The existing medium density residential car parking rates in the Canterbury DCP have been compared with a number of other Councils across Sydney and standard references. This comparison is provided in Table 8.3.

Table 8.3: Comparison of Residential Car Parking Rates

Reference		Area	Resident				Visitor
			Studio Units	1 Bedroom	2 Bedroom	3+ Bedroom	
RTA (NSW)				1	1.2	1.5	0.2
Local Council	Canterbury City Council			1	1	2	0.2
	Ashfield Council		1	1	1.2	1.5	0.2
	Bankstown City Council	Bankstown CBD		1	1	1	0.2
		Other Centres		1	1.2	1.5	0.2
	Burwood Council	Burwood Town Centre	0.5	1	1	1.5	0.167
		Other	0.5	1	1.3	2	0.25
	Marrickville Council	Parking Area 1 [1]	0.2	0.2	1	1	0.1
		Parking Area 2 [2]	0.25	0.25	1	1	0.1
		Parking Area 3	0.5	0.5	1	1	0.125
	Willoughby City Council	Outside Railway Precincts and Major PT Corridors	1	1	1.2	1.5	0.25
		Within Railway Precincts and on Major PT Corridors	0.5	1	1	1.25	0.25
		Residential Developments in Business Zones	1	1	1	1	0.33
	North Sydney Council [4]	Residential Zone	1	1	1	1.5	0.25
		Non-Residential Zone	0.5	0.5	1	1	0
	Penrith City Council			1	1	2	0.2
	Minimum		**0.2**	**0.2**	**1**	**1**	**0.1**
	15th Percentile		**0.34**	**0.50**	**1.00**	**1.00**	**0.13**
	Average		**0.60**	**0.84**	**1.06**	**1.38**	**0.20**
	85% Percentile		**1.00**	**1.00**	**1.20**	**1.95**	**0.25**
	Maximum		**1**	**1**	**1.3**	**2**	**0.33**
ABS Car Ownership Data 2006	Canterbury City Council	Belfield, Ashbury, Canterbury, Hurlstone Park, Punchbowl, Roselands, Wiley Park, Croydon Park, Earlwood, Narwee	0.21	0.48	0.95	1.47	
		Belmore, Lakemba, Roselands, Wiley Park, Campsie, Canterbury, Clemton Park	0.23	0.68	0.91	1.16	
		Average	0.21	0.55	0.94	1.37	

[1] Is where parking is most constrained - The suburb of Newtown, but excluding land to the west of Edgeware Road; The suburb of Camperdown, but excluding land to the north of Salisbury Road, to the west of St Mary's Street, to the north of Trade Street and to the west of Kingston Road, The suburb of Enmore, but excluding land to the west of Liberty Street, to the south of Stanmore Road and to the West of Enmore Road; and all business zones within the major centres of Marrickville, Dulwich Hill and Petersham.

[2] Where parking is moderately constrained - 200m around Parking Area 1, 200m around railway stations, All business zones not within Parking Area 1. Is where parking is least constrained and is not within areas 1 or 2.

[4] Maximum Parking Rates

Table 8.3 indicates that ABS car ownership data for 2006 varies between 0.21 and 1.37 cars per dwelling for studio and 3 + bedroom apartments respectively. Average DCP and RTA car parking rates vary between 0.49 and 1.42 for studio and 3 + bedroom apartments respectively.

This table was used as the basis for providing recommended residential parking rates which are set out in Section 8.5.3.

8.5 Recommended Car Parking Rates

This section sets out a summary of the car parking rates which GTA Consultants recommend be adopted by Council and incorporated within the Canterbury DCP. There are 12 town centres that we have considered as part of this study. Figure 2.1 divides the 12 centres into large, other town centres with good public transport access and other town centres with limited public transport access town centres. These are:

- Large Town Centres – Belmore, Campsie, Canterbury[8] and Lakemba
- Other Town Centres with good public transport access[9] – Earlwood, Hurlstone Park, Punchbowl, Narwee and Wiley Park
- Other Town Centres with limited public transport access – Belfield, Croydon Park, New Canterbury Road.

The rates that are recommended in this section have been based on the size of the centre for commercial rates, and the size of the centre and the presence of a railway station or a strategic bus corridor for residential rates.

It is recommended that as the centres expand, both from the point of view of land use and transport infrastructure and services, Council review the list of large and 'other' town centres to ensure that each town centre is classified correctly.

8.5.1 Recommended Commercial Car Parking Rate Changes

Table 8.4 presents a summary of the recommended office and retail car parking rates.

[8] Canterbury has been classified as a 'Large Town Centre' as it is proposed to receive significant redevelopment in the near future which will make it a 'Large Town Centre'. Development Applications are currently being received for major development of this centre.

[9] A railway station or a strategic bus corridor through the town centre

Table 8.4: Recommended Minimum Commercial (Office and Retail) Car Parking Rates

Use	Town Centres	Existing DCP Car Parking Rate (spaces / unit GFA)	Recommended Car Parking Rate (spaces / unit GFA)	Reasoning
Office	Large	1/40sqm or 2.5 / 100sqm	1 / 60sqm or 1.67 / 100sqm	DCP car parking rates for office floor space in Marrickville are as low as 1 space per 100sqm GFA however given the demographic of the area a reduction of 1.67 spaces per 100sqm GFA is considered appropriate.
	Other with good PT		1 / 50sqm or 2.0 / 100sqm	Public transport access to smaller centres is typically not as good as larger centres and as such a larger car parking rate is proposed than for large town centres.
	Other with limited PT		1 / 40sqm or 2.5 / 100sqm	Small centres without a railway station or 'good' public transport access tend to require additional car parking to meet employer needs. For this reason, no change to the existing council DCP parking rate is proposed.
Retail <120sqm	Large	1/40sqm or 2.5 / 100sqm	1 / 66.7sqm or 1.5 / 100sqm	Small shops in large centres typically require a minimum of one space for a staff member. Customer parking in large centres can be shared between all retail premises.
	Other with good PT		1 / 50sqm or 2.0 / 100sqm	At other retail centres with public transport, there are generally less small shops and that draws less customers. With less variety of small shops, customers may be more likely to go to a specific shop for their item and as such, a higher car parking rate than for large centres has been adopted.
	Other with limited PT		1 / 50sqm or 2.0 / 100sqm	At other retail centres without public transport there are generally less small shops and that draws less customers. With less variety of small shops, customers may be more likely to go to a specific shop for their item and as such, a higher car parking rate than for large centres has been adopted.
Retail 120 to <1,000sqm	Large	1/30sqm or 3.33 / 100sqm	1 / 33sqm or 3.0 / 100sqm	Larger stores draw more customers and have a greater staff requirement than small stores.
	Other with good PT		1 / 40sqm or 2.5 / 100sqm	A lower car parking rate is proposed as smaller centres typically draw less customers.
	Other with limited PT		1 / 40sqm or 2.5 / 100sqm	A lower car parking rate is proposed as smaller centres typically draw less customers.
Retail > 1,000sqm	Large	1/22sqm or 4.55 / 100sqm	1 / 27sqm or 3.7 / 100sqm	This rate is based on the surveyed rate for two sites in Campsie and represents the highest observed rate for all town centres.
	Other with good PT		1 / 27sqm or 3.7 / 100sqm	In smaller centres the larger retail outlets (usually supermarkets) become destinations in their own right rather than potentially part of a multi-purpose trip. Small centres typically draw less customers however this is balanced with generally less public transport access. As such, there is no difference proposed between the large and other centres.
	Other with limited PT		1 / 27sqm or 3.7 / 100sqm	

Table 8.4 indicates car parking rates for large town centre and other (medium and small) town centres. It is recommended that Council formally adopt the town centres as 'large' definition which is based on

the presence of transport (a railway station and a strategic bus route) and the density and range of commercial and retail uses. Currently GTA Consultants has suggested that Belmore, Campsie, Canterbury and Lakemba be classified as 'Large' town centres however as centres such as Punchbowl grow in the future, they could be suitable for classification as a 'Large' town centre.

In all cases, the developer should be provided with the opportunity to justify a reduction of these minimum car parking requirements, based on following:

- The availability of suitable car parking in the proximity of the development.
- The sharing of car spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces.
- Any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement.
- Preparation, implementation and ongoing review of a Green Travel Plan.
- An empirical assessment of car parking demand.
- Any other relevant consideration.

In this regard the developer should be required to submit a Transport Impact Assessment prepared by a suitably qualified person that provides clear justification for any car parking reduction.

8.5.2 Recommended Residential Car Parking Rates

Table 8.5 provides recommended residential car parking rates for the Canterbury LGA.

Table 8.5: Canterbury Town Centres – Recommended Minimum Residential Parking Rates

Bedrooms	Existing DCP Car Parking Rates	Large Centre (with Public Transport)	Other Centres (with good Public Transport)[10]	Other Centres (with limited Transport)	ABS 2006 Car Ownership (Maximum per Person)
Studio	Not Specified	0.25	0.5	0.67	0.23
1 bedroom	1	0.8	0.8	1	0.68
2 bedroom	1.2	1	1	1.2	0.95
3 bedrooms or more	2	1	1	1.5	1.47
Visitor Parking	0.2	0	0.15	0.2	

Table 8.5 indicates that for all centres with good public transport access, the minimum car parking rates should be reduced. For other centres without good public transport access the rates for 3 bedroom apartments are recommended to be reduced with other rates remaining the same.

It is not recommended that any residential visitor car parking in large town centres be provided as this would be expected to be accommodated within the existing on-street car parking supply noting that the peak time for visitor parking would not be expected to coincide with the peak operating times of the town centres.

In all cases, the developer should be provided with the opportunity to justify a reduction of these car parking requirements, based on the following:

[10] With a railway station or a strategic bus corridor through the town centre.

- The availability of suitable car parking in the proximity of the development (visitors only).
- The sharing of car spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces.
- Any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement.
- Preparation and implementation of Green Travel Plans.
- An empirical assessment of car parking demand.
- Any other relevant considerations.

In this regard, the developer should be required to submit a Transport Impact Assessment prepared by a suitably qualified person that provides clear justification of for any car parking reduction.

8.5.3 Associated Management Measures

The following management measures should be provided in conjunction with the reduced minimum car parking rates in the future.

- Future residential developments, with more than one dwelling per lot, should not be allowed a residential parking permit for on-street parking if a permit scheme is introduced into the LGA.
- Areas around town centres should be protected with car parking restrictions to ensure that residents of new apartments and employees of new developments do not park on-street in valuable spaces.
- It is recommended that the City of Canterbury review their bicycle car parking requirements to ensure that the reduced car parking rates are balanced by an increase in bicycle parking requirements and better overall facilities.

9. Conclusions and Recommendations

Based on the detailed work undertaken as part of the Canterbury Town Centres Parking Strategy, the following conclusions and recommendations have been formulated.

9.1 Management of Existing Car Parking

The following section sets out a summary of strategies to manage existing car parking demand within the town centres across the Canterbury local government area.

Strategy Recommendation 1 – That on-street town centre car parking hierarchy guidelines be adopted by Council as set out in Table 9.1.

Table 9.1: Town Centre Parking Hierarchy Guidelines – On-Street

Priority (Highest to Lowest)	Description
Disabled	In accordance with identified needs and relevant standards.
Public Transport Zone	Bus stop or taxi stand (where applicable)
Loading Zone	If off-street loading is not provided
Bicycle Parking	Where bicycle parking on footpaths is not available
Drop off / Pick up	Short term (2 min to 15 min)parking
Customers / Shoppers	Time restrictions generally vary from 15 minutes to 2 hours as required by the nature of the business, for example short term for take-away restaurant, convenient shops and longer term for restaurants, office and visiting.
Car Sharing	Where applicable
Residential (including visitors)	Only applies in smaller centre with a mix of shop and residences; requires balancing of economic needs of the strip and surrounding residential amenity.
Traders and Local Employees	Local employees should not park in shopping strips where this undermines parking turnover that supports the businesses, but should be encouraged to use non car based transport (if possible) or to park away from the town centre.
Commuter Parking	Parking for commuter use should only be considered where deemed to be appropriate and not impact on residential amenity or economic viability.

Strategy Recommendation 2 –That short term town centre car parking restrictions be allocated in a consistent manner as shown in Figure 9.1 and Figure 9.2.

Figure 9.1: Consistent Parking Restriction Approach within Town Centres

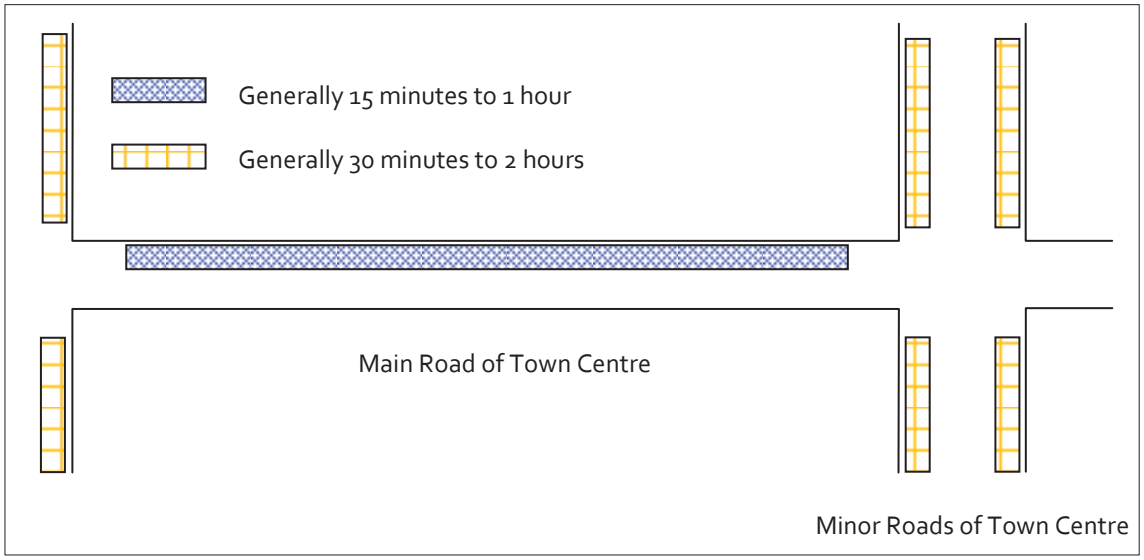
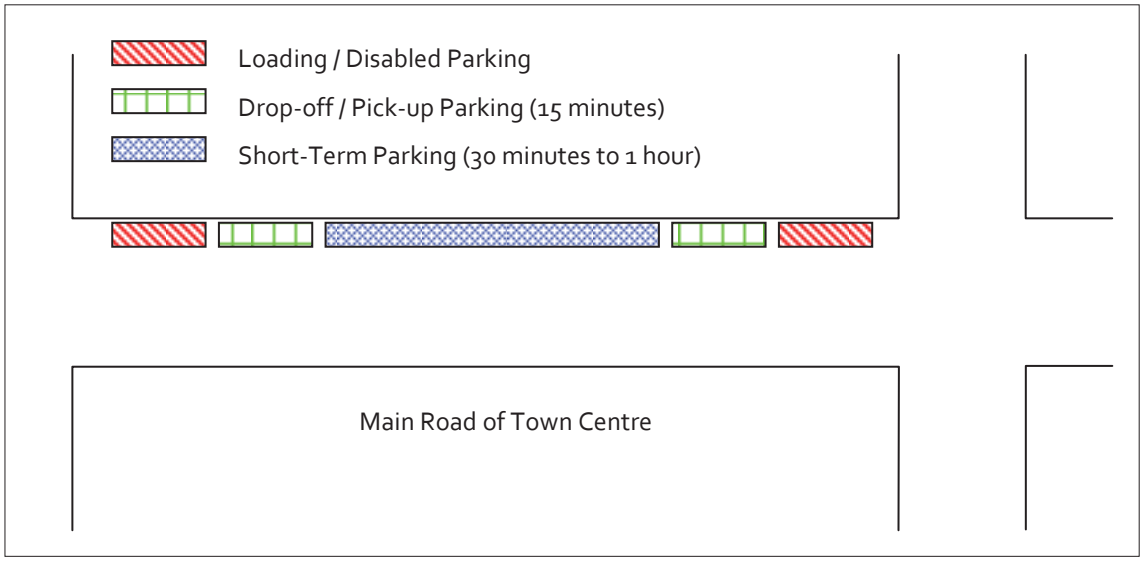


Figure 9.2: Consistent Parking Restriction Approach on Main Town Centre Road



Strategy Recommendation 3 – That bus zones are located in suitable and practical areas and, where possible, are designed in accordance with the State Transit Bus Stop Installation Guide for Local Councils 2002.

Strategy Recommendation 4 – That loading in laneways be permitted subject to compliance with the widths outlined in Table 9.2.

Table 9.2: Minimum Dimensions of Loading Zones in Laneways

	Through Lane Width (metres)	Loading Zone Width (metres)	Total Laneway Width (metres)
Desirable Minimum	3.5 [1]	2.6 [2]	6.1
Minimum	3.2	2.6 [4]	5.8

[5] AS2890.2-2002 Table 3.1
[6] AS2890.5-1993 Table 2.1
[7] Based on the maximum width of a delivery vehicle including mirrors and an allowance of 300mm on each side of the
[8] Based on GTA Consultants research into delivery vehicle widths and AS2890.2-1993

Strategy Recommendation 5 - That all town centres are inspected regularly by rangers to ensure that parking signs are compliant with AS1742.11.

Strategy Recommendation 6 - That a consistent directional parking signs strategy be developed by Council for all town centres or at a minimum, within large town centres and other town centres to provide consistent awareness of public car parks across the town centres.

Strategy Recommendation 7 – That the localised parking management strategies be implemented for each town centre as outlined in Section 7.3.2.

9.2 Management of Future Car Parking

The following section sets out a summary of the strategies to manage future car parking demand within the town centres across the Canterbury LGA.

The town centres which will require additional parking supply in the future are indicated in Table 9.3.

Table 9.3: Town Centre Required Spaces

Centre Name	Additional New Long Term Spaces Required	Additional New Short Term Spaces Required [1]	Spaces converted from Long Term to Short Term
Belmore	21	65	16
Campsie	-	25	40
Lakemba	24	18	53
Punchbowl	48	35	14

[1] Excludes long-term spaces converted to short-term spaces

Strategy Recommendation 8 – Future car parking be provided as follows:

- On-street – it is recommended that use of on-street car parking be maximised (up to approximately 85% of capacity).
- By way of additional public car parks – it is recommended that any additional public car parks be provided by way of Section 94 developer contributions.
- By way of an agreement with private developers to provide additional car parking for use by the public – it is recommended that any additional public car parking be provided by way of Section 94 developer contributions.

It is recommended the Council identify suitable car parking locations and work with developers to provide additional car parking for public use to reduce the cost to developers and the public.

Strategy Recommendation 9 – That each town centre be categorised by the City of Canterbury as follows:

- Large Town Centres – Belmore, Campsie, Canterbury and Lakemba
- Other Town Centres with good public transport access[11] – Earlwood, Hurlstone Park, Punchbowl, Narwee and Wiley Park
- Other Town Centres with limited public transport access – Belfield, Croydon Park, New Canterbury Road.

It is recommended that Council review this list regularly to ensure that as each town centre changes, the applicable car parking rates still apply.

Strategy Recommendation 10 – That future car parking be provided with respect to the minimum car parking rates in Table 9.4 and Table 9.5.

[11] A railway station or a strategic bus corridor through the town centre

Table 9.4: Recommended Minimum Commercial (office and retail) Car Parking Rates

Use	Town Centres	Recommended Car Parking Rate (spaces / unit GFA)
Office	Large	1.67 / 100sqm or 1 / 60sqm
	Other with good PT	1 / 50sqm or 2 / 100sqm
	Other with limited PT	1 / 40sqm or 2.5 / 100sqm
Retail <120sqm	Large	1 / 66.7sqm or 1.5 / 100sqm
	Other with good PT	1 / 50sqm or 2 / 100sqm
	Other with limited PT	1 / 50sqm or 2 / 100sqm
Retail 120 to <1000sqm	Large	1 / 33sqm or 3.0 / 100sqm
	Other with good PT	1 / 40sqm or 2.5 / 100sqm
	Other with limited PT	1 / 40sqm or 2.5 / 100sqm
Retail > 1000sqm	Large	1 / 27sqm or 3.7 / 100sqm
	Other with good PT	1 / 27sqm or 3.7 / 100sqm
	Other with limited PT	1 / 27sqm or 3.7 / 100sqm

Table 9.5: Canterbury Town Centres – Recommended Minimum Residential Car Parking Rates

Bedrooms	Existing DCP Car Parking Rates	Large Centre (with good Public Transport)	Other Centres (with good Public Transport)	Other Centres (with limited Public Transport)
Studio	Not Specified	0.25	0.5	0.67
1 bedroom	1	0.8	0.8	1
2 bedroom	1.2	1	1	1.2
3 bedrooms or more	2	1	1	1.5
Visitor Parking	0.2	0	0.15	0.2

Strategy Recommendation 11 – That in all cases, the developer should be provided with the opportunity to justify a reduction of these minimum car parking requirements, based on the following:

- The availability of suitable car parking in the proximity of the development.
- The sharing of car spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces.
- Any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement.
- Preparation, implementation and ongoing review of a Green Travel Plan.
- An empirical assessment of car parking demand.
- Any other relevant consideration.

In this regard the developer should be required to submit a Transport Impact Assessment prepared by a suitably qualified person that provides clear justification for any car parking reduction.

Strategy Recommendation 12 – That future residential developments with more than one dwelling per lot, not be allowed a residential parking permit for on-street parking if a residential permit scheme is introduced into the LGA.

Strategy Recommendation 13 – That future residential visitor car parking demands be accommodated off-site where possible either on-street or in public car parks. On-site visitor car parking for residential developments is the least preferred option. Strategy Recommendation 14 – That as a future strategy, the City of Canterbury investigate areas around town centres to be protected with short term car

parking restrictions to ensure that residents of new apartments and employees of new developments do not park on-street in valuable town centre spaces. If determined to be required, this would involve the introduction of resident parking schemes. It is recommended that the introduction of these schemes be provided in accordance with RMS requirements.

Strategy Recommendation 15 - That the City of Canterbury review their bicycle car parking requirements to ensure that the reduced car parking rates are balanced by an increase in bicycle parking requirements and better overall facilities.

Strategy Recommendation 16 – That the section 94 developer contribution costs be investigated in more detail once the preferred location of parking has been determined in each centre.

Strategy Recommendation 17 – That Council further investigate the option to introduce paid parking where town centres are operating at or above theoretical capacity as part of the future management options.

Strategy Recommendation 18 – That Council consolidate its interests around the existing larger car park at 46-52 Croydon Street in Lakemba to maximise efficiency. To this end, 28 Croydon Street in Lakemba is no longer required for future car parking.

Strategy Recommendation 19 – That this strategy be reviewed every three to five years to ensure that development remains on-track as predicted within each Town Centre and the management recommendations remain relevant and in accordance with best practice.

Appendix A

Parking Inventory and Demand Results

Legend

- 5 min, 10 min, or 15 min P
- 1/2 P
- 1 P
- 2 P
- 3 P or 4 P
- Disabled Parking
- Bus Zone
- Loading/Mail/Taxi/Truck Zone
- Unrestricted Parking
- Clearway
- XXX Property No.
- Study Area
- Council Owned Land

Issue	Date	By	Chkd	Appd
P4	May 2012	BL	MH	AS

Metres
0 20 40 80

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Client
City of Canterbury

Job Title
Town Centres Parking Strategy

Drawing Title
Belfield Town Centre Parking Supply and Management Recommendations

Scale at A3
1:1,500

Drawing Status
Final

Job No
JS10270

Issue
P4

Belfield

Street	On/Off Street	Side	Between			Restriction Type	Hour	Day	Residential	Spaces	Demand Tuesday 23rd November 8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Punchbowl Road	Off	S	Linda St.		Burwood Rd	Hotel Carpark			N	**16**	4	5	6	6	7	10	12	13	16	17
Punchbowl Road	On	S	Linda St.		Burwood Rd	Clearway	6-10am	M-F	N	**6**	0	0	0	0	0	0	0	0	0	0
Burwood Rd	On	W	Punchbowl Rd		Downes Rd	1/2 hr	8:30-6pm	M-Sun	N	**7**	4	4	3	6	5	4	6	5	6	6
Burwood Rd	On	W	Downes Rd		Blackwood	Unrestricted			Y	**11**	6	7	6	8	7	8	8	7	4	5
Burwood Rd	On	W	Blackwood St		Jay Avenue	Unrestricted			Y	**5**	1	2	2	1	1	1	0	0	2	3
Burwood Rd	On	E	Blackwood St		Jay Avenue	Unrestricted			Y	**6**	3	3	2	2	1	3	2	4	3	4
Burwood Rd	On	E	Blackwood St		Downes Rd	1 hr	8:30-6pm	M-F	Y/N	**4**	1	1	0	0	0	2	0	0	0	1
Burwood Rd	Off	E	Blackwood St		Downes Rd	Grape Vine Cellars			N	**4**	0	0	0	0	0	0	0	0	0	1
Burwood Rd	Off	E	Blackwood St		Downes Rd	Belfield Plaza			N	**22**	7	10	10	9	12	13	11	12	9	7
Burwood Rd	On	E	Blackwood St		Downes Rd	1 hr	8:30-6pm	M-F	N	**4**	0	0	0	0	0	0	0	0	0	0
Downes St	On	S	Burwood Rd		End of Resistriction	1 hr	8:30-6pm	M-F	N	**3**	3	3	3	3	2	3	2	2	3	2
Downes St	On	S	Burwood Rd		End of No Parking	1 hr	9:30-3:30pm, 4:30-6pm	M-F	N	**1**	1	1	1	2	1	0	0	0	1	1
Downes St	Off	N	Council Carpark			3 hr	9-6pm 9-1pm	M-F Sat	N	**35**	**5**	6	11	10	12	9	10	11	8	2
Downes St	Off	N	Council Carpark			Disabled			N	**1**	**0**	0	0	0	0	1	0	1	0	0
Downes St	On	N	End of Resistriction		Burwood Rd	1 hr	8:30-6pm	M-Sun	N	**8**	5	5	6	6	4	4	4	6	5	5
Burwood Rd	On	E	End of Resistriction		Punchbowl Rd	1/2 hr	8:30-7pm	M-Sun	N	**9**	6	7	5	8	8	7	5	8	7	6
Punchbowl Road	On	N	Burwood Rd		Linda St	Clearway	6-10am 3-7pm	M-F	N	**2**	0	0	0	0	0	0	0	0	0	0
Punchbowl Road	Off	N	Burwood Rd		Linda St	Home Plus			N	**7**	2	3	4	5	5	4	3	1	2	3
Punchbowl Road	Off	N	Burwood Rd		Linda St	BP Petrol Station			N	**10**	4	4	6	7	6	6	5	6	6	5
									Total	161	52	61	65	73	71	75	68	76	72	68
									Occupancy		32%	38%	40%	45%	44%	47%	42%	47%	45%	42%

		8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm
Total No Parking/Clearway with Time Restraints		8	8	0	0	0	0	0	2	2	2
	Total Supply	153	153	161	161	161	161	161	159	159	159
	Total Parking	52	61	65	73	71	75	68	76	72	68
		34%	40%	40%	45%	44%	47%	42%	48%	45%	43%
LT No Parking/Clearway with Time Restraints		8	8	0	0	0	0	0	2	2	2
	LT Supply	82	82	90	90	90	90	90	88	88	88
	LT Parking	27	34	36	38	39	46	41	44	42	45
		33%	41%	40%	42%	43%	51%	46%	50%	48%	51%
All minus LT No Parking /Clearway with Time Restraints		0	0	0	0	0	0	0	0	0	0
	All minus LT Supply	71	71	71	71	71	71	71	71	71	71
	All minus LT Parking	25	27	29	35	32	29	27	32	30	23
		35%	38%	41%	49%	45%	41%	38%	45%	42%	32%
ST No Parking/Clearway with Time Restraints		0	0	0	0	0	0	0	0	0	0
	ST Supply	71	71	71	71	71	71	71	71	71	71
	ST Parking	25	27	29	35	32	29	27	32	30	23
		35%	38%	41%	49%	45%	41%	38%	45%	42%	32%
LT and ST Spaces with restraints		8	8	0	0	0	0	0	2	2	2
	LT and ST Supply	153	153	161	161	161	161	161	159	159	159
	LT and ST Demand	52	61	65	73	71	75	68	76	72	68
		34%	40%	40%	45%	44%	47%	42%	48%	45%	43%

Belfield

Street	On/Off Street	Side	Between			Restriction Type	Hour	Day	Residential	Spaces	Demand Saturday 27th November 9am	10am	11am	12pm	1pm	2pm	3pm
Punchbowl Road	Off	S	Linda St		Burwood Rd	Hotel Carpark			N	16	2	5	3	8	8	12	14
Punchbowl Road	On	S	Linda St		Burwood Rd	Clearway	6-10am	M-F	N	6	0	0	0	0	0	0	0
Burwood Rd	On	W	Punchbowl Rd		Downes Rd	1/2 hr	8:30-6pm	M-Sun	N	7	5	5	4	6	6	7	7
Burwood Rd	On	W	Downes Rd		Blackwood	Unrestricted			Y	11	5	6	9	9	9	8	7
Burwood Rd	On	W	Blackwood St		Jay Avenue	Unrestricted			Y	5	3	4	4	5	2	4	4
Burwood Rd	On	E	Blackwood St		Jay Avenue	Unrestricted			Y	6	3	2	2	8	4	4	2
Burwood Rd	On	E	Blackwood St		Downes Rd	1 hr	8:30-6	M-F	Y/N	4	4	4	5	4	3	2	3
Burwood Rd	Off	E	Blackwood St		Downes Rd	Grape Vine Cellars			N	4	0	1	0	0	0	0	0
Burwood Rd	Off	E	Blackwood St		Downes Rd	Belfield Plaza			N	22	4	9	18	15	14	11	11
Burwood Rd	On	E	Blackwood St		Downes Rd	1 hr	8:30-6	M-F	N	4	3	2	1	3	3	4	2
Downes St	On	S	Burwood Rd		End of Restriction	1 hr	8:30-6	M-F	N	3	1	1	1	1	1	3	4
Downes St	On	S	Burwood Rd		End of No Parking	1 hr	9:30-3:30, 4:30-6	M-F	N	1	1	1	1	1	1	1	1
						No Parking	8:30-9:30 3:30-4:30	M-F									
Downes St	Off	N	Council Carpark			3 hr	9-6	9-1 M-F Sat	N	35	11	18	19	35	35	19	16
Downes St	Off	N	Council Carpark			Disabled			N	1	0	0	0	1	1	0	0
Downes St	On	N	End of Resistriction		Burwood Rd	1 hr	8:30-6	M-Sun	N	8	3	2	5	5	6	3	6
Burwood Rd	On	E	End of Resistriction		Punchbowl Rd	1/2 hr	8:30-7	M-Sun	N	9	4	9	8	9	8	8	8
Punchbowl Road	On	N	Burwood Rd		Linda St	Clearway	6-10	3-7 M-F	N	2	0	0	0	0	0	0	0
Punchbowl Road	Off	N	Burwood Rd		Linda St	Home Plus			N	7	2	4	4	3	4	7	5
Punchbowl Road	Off	N	Burwood Rd		Linda St	BP Petrol Station			N	10	8	10	7	7	3	4	5
									Total	161	59	83	91	120	108	97	95
									Occupancy		37%	52%	57%	75%	67%	60%	59%

Total No Parking/Clearway with Time Restraints	0	0	0	0	0	0	0
Total Supply	161	161	161	161	161	161	161
Total Parking	59	83	91	120	108	97	95
	37%	52%	57%	75%	67%	60%	59%
LT No Parking/Clearway with Time Restraints	0	0	0	0	0	0	0
LT Supply	90	90	90	90	90	90	90
LT Parking	27	41	47	56	45	50	48
	30%	46%	52%	62%	50%	56%	53%
All minus LT No Parking /Clearway with Time Restraints	0	0	0	0	0	0	0
All minus LT Supply	71	71	71	71	71	71	71
All minus LT Parking	32	42	44	64	63	47	47
	45%	59%	62%	90%	89%	66%	66%
ST No Parking/Clearway with Time Restraints	0	0	0	0	0	0	0
ST Supply	71	71	71	71	71	71	71
ST Parking	32	42	44	64	63	47	47
	45%	59%	62%	90%	89%	66%	66%
LT and ST Spaces with restraints	0	0	0	0	0	0	0
LT and ST Supply	161	161	161	161	161	161	161
LT and ST Demand	59	83	91	120	108	97	95
	37%	52%	57%	75%	67%	60%	59%

Legend

- 5 min, 10 min, or 15 min P
- 1/2 P
- 1 P
- 2 P
- 3 P or 4 P
- Disabled Parking
- Bus Zone
- Loading/Mail/Taxi/Truck Zone
- Unrestricted Parking
- Clearway
- XXX Property No.
- Study Area
- Council Owned Land

Issue	Date	By	Chkd	Appd
P4	May 2012	BL	MH	AS

Metres
0 40 80 160

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Client
City of Canterbury

Job Title
Town Centres Parking Strategy

Drawing Title
Belmore Town Centre Parking Supply and Management Recommendations

Scale at A3
1:3,000

Drawing Status
Final

Job No
JS10270

Issue
P4

Street	Between	Restrictions	Supply	Occupancy										Average	Average Occupancy
				8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
Burwood Rd															
West Side	**Southern end (460) To Leylands Pde**	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**10**	3	6	10	9	8	8	8	8	9	10	8	79%
		Bus Zone	**3**	0	0	0	0	0	0	0	0	0	0	0	0%
	Leylands Pde To Collins St	Loading Zone	**3**	0	1	1	0	1	3	2	2	1	2	1	43%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**8**	5	5	7	7	8	8	8	7	7	7	7	86%
	Collins St To Bridge Rd	1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**13**	9	12	11	11	11	11	2	13	11	13	10	80%
		Bus Zone	**3**	0	0	1	1	0	0	0	1	0	0	0	10%
	Bridge Rd To Dean Ave	Bus Zone	**4**	0	0	0	0	0	0	0	0	0	0	0	0%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**5**	0	1	1	4	4	3	3	3	4	4	3	54%
	Dean Ave To Station Rd	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**15**	1	4	8	10	12	10	8	12	12	11	9	59%
	Station Rd To Northern end (280)	Unrestricted	**5**	4	4	4	4	4	4	4	1	4	2	4	70%
East Side	**Northern end (280) To Etela St**	Unrestricted	**5**	4	4	4	4	3	4	4	3	4	2	4	72%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**5**	4	4	4	3	3	3	2	3	0	0	3	52%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**4**	1	0	2	2	3	1	2	1	2	2	2	40%
		Bus Zone	**3**	0	0	0	0	0	0	0	0	0	0	0	0%
	Etela St To Redman Pde	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**10**	6	7	7	7	9	8	5	8	8	10	8	75%
	Redman Pde To Tobruk Ave	Bus Zone	**3**	0	0	0	0	0	0	0	0	0	0	0	0%
	Tobruk Ave To Leylands Pde	No Parking 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	0	0	0	0	0	0	1	1	1	0	0	15%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	3	2	3	2	3	2	2	3	3	3	3	87%
		Mail Zone	**1**	0	1	1	0	0	0	0	0	0	0	0	20%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**15**	10	11	12	10	11	14	9	11	12	10	11	73%
		Taxi zone	**3**	0	0	0	2	0	0	0	0	1	0	0	10%
		Bus Zone	**3**	0	0	0	0	0	0	0	0	0	0	0	0%
	Leylands Pde To Southern end (462)	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**8**	2	6	5	4	6	5	4	4	5	4	5	56%
		No Parking		0	0	0	0	0	1	0	0	0	0	0	#DIV/0!
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**7**	5	4	6	5	6	5	5	5	5	5	5	73%
Paragon Ln															
West Side	**Leylands Pde To Collins St**	No Parking		1	1	2	2	2	1	1	1	2	0	1	#DIV/0!
	Collins St To Bridge Rd	No Parking		0	0	2	2	0	0	0	0	0	0	0	#DIV/0!
East Side	**Bridge Rd To Collins St**	No Parking		3	4	4	4	0	2	2	3	2	2	3	#DIV/0!
	Collins St To Leylands Pde	No Parking		0	0	0	0	0	0	0	0	0	1	0	#DIV/0!
Bridge Rd															
North Side	**Marie Ln To Burwood Rd**	Unrestricted	**28**	28	28	28	26	28	26	24	25	23	18	25	91%
		Taxi Zone	**2**	1	1	0	1	2	1	1	1	0	0	1	40%
		Taxi Zone	**2**	0	1	1	0	2	0	2	1	0	1	1	40%
South Side	**Burwood Rd To Paragon Ln**	Bus Zone	**3**	0	0	0	0	0	1	0	0	0	0	0	3%
	Paragon Ln To The Dynasty entrance	Loading Zone 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm	**1**	0	1	0	0	1	0	1	1	0	0	0	40%
		1/2 P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	1	1	2	2	2	0	2	0	2	2	1	47%
	The Dynasty entrance To Carpark	Unrestricted	**3**	3	3	3	3	4	4	4	2	3	3	3	107%
	Carpark exit To Marie Ln	Unrestricted	**8**	6	7	6	6	5	5	4	4	3	2	5	60%
Leylands Pde															
North Side	**Kent St To Paragon Ln**	Unrestricted	**4**	3	4	4	4	4	3	2	2	2	2	3	75%
		Bus Zone	**3**	0	0	0	0	0	1	0	0	0	0	0	3%
	Burwood Rd To Acacia Ln	1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	0	0	0	0	1	1	1	1	1	1	1	30%
	Acacia Ln To Acacia St	Unrestricted	**6**	5	6	6	5	6	6	5	5	4	4	5	87%
	Acacia St To Eastern end (15)	Unrestricted	**1**	0	0	1	1	0	1	1	1	1	1	1	70%
South Side	**Eastern end (24) To Drummond St**	Unrestricted	**8**	2	4	6	6	4	5	6	5	2	2	4	53%
	Burwood Rd To Paragon Ln	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**7**	1	6	5	5	6	7	5	1	1	5	4	60%
		Unrestricted	**8**	4	6	6	5	6	5	5	5	6	4	5	65%
Collins St															
North Side	**Western end (27) To Paragon Ln**	Unrestricted	**23**	22	23	23	23	23	23	23	22	23	22	23	99%
	Paragon Ln To Burwood Rd	1/2P	**3**	2	3	2	3	2	4	3	3	3	3	3	93%
		Disabled	**1**	0	0	1	0	1	1	1	0	1	0	1	50%
South Side	**Burwood Rd To Paragon Ln**	Loading Zone	**2**	0	0	1	2	1	2	2	2	1	1	1	60%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	0	1	2	2	2	2	2	2	2	1	2	80%
	Paragon Ln To Western end (27)	Unrestricted	**18**	16	18	18	18	18	18	18	18	15	17	17	97%
Cleary Ln															
East Side	**Station Rd To Dean Ave**	No Stopping		0	0	0	1	3	1	0	0	0	0	1	#DIV/0!
Station Rd															
North Side	**Cleary Ave To Burwood Rd**	Unrestricted (but too narrow for parking)		0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
		No Stopping		0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
South Side	**Burwood Rd To Cleary Ln**	Unrestricted	**3**	3	3	3	2	2	3	3	2	2	3	3	87%
	Cleary Ln To Cleary Ave	Unrestricted	**4**	1	1	0	0	1	0	1	1	1	2	1	20%
Dean Ave															
North Side	**Cleary Ave To Clearly Ln**	Unrestricted	**5**	2	2	2	2	4	4	3	4	4	4	3	62%
	Clearly Ln To Burwood Rd	Unrestricted	**4**	0	0	2	3	3	4	2	2	4	2	2	55%
South Side	**Burwood Rd To Rachel Ln**	Unrestricted	**4**	4	3	4	4	4	4	3	3	3	3	4	88%
	Rachel Ln To Cleary Ave	Unrestricted	**3**	3	2	2	2	3	4	3	3	3	2	3	90%

Street	Between	Restrictions	Supply	Occupancy										Average	Average Occupancy
				8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00		
Clealry Ave															
West Side	**Southern end To Station Rd**	Unrestricted	**24**	7	9	10	9	8	10	9	8	9	10	9	37%
East Side	**Station Rd To Dean Ave**	Unrestricted	**18**	4	5	4	7	8	9	6	4	9	7	6	35%
	Dean Ave To Southern end	Unrestricted	**3**	3	3	4	4	4	3	4	5	4	3	4	123%
Etela St															
North Side	**Burwood Rd To Redman Ln**	Unrestricted	**3**	3	3	3	3	3	3	2	2	3	3	3	93%
South Side	**Redman Ln To Burwood Rd**	Unrestricted	**4**	3	3	3	3	3	3	3	3	3	3	3	75%
Redman Pde															
North Side	**Burwood Rd To Redman Ln**	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	2	2	4	0	2	2	2	2	3	2	2	70%
	Redman Ln To Eastern end (26)	Unrestricted	**5**	5	5	5	5	5	5	5	5	5	4	5	98%
		P10min 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	1	1	0	0	0	0	2	2	0	1	1	35%
		Unrestricted	**4**	2	2	3	3	4	3	4	4	4	4	3	83%
		P10min	**2**	1	1	0	0	0	0	2	0	0	0	0	20%
South Side	**Eastern end To Burwood Rd**	Disabled 90 Degree Rear To Kerb	**2**	2	2	0	0	1	0	2	1	0	0	1	40%
		Unrestricted 90 Degree Rear To Kerb	**24**	23	24	24	24	24	24	24	24	22	15	23	95%
		Disabled 90 Degree Rear To Kerb	**2**	0	0	0	0	1	0	0	0	0	0	0	5%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	0	1	0	0	1	0	2	2	0	0	1	20%
Redman Ln															
West Side	**Redman Pde To Etela St**	No Parking		1	1	1	0	1	1	1	1	4	1	1	#DIV/0!
	Etela St To Northern end (10)	No Stopping		1	1	0	1	1	0	2	1	1	2	1	#DIV/0!
Acacia Ln															
West Side	**Leylands pde To Tobruk Ave**	No Parking		4	1	1	1	1	2	1	2	3	4	2	#DIV/0!
Acacia St															
West Side	**Leylands Pde To Northern end**	Unrestricted	**9**	1	2	6	4	5	4	4	4	3	3	4	40%
		Unrestricted	**15**	2	3	4	4	4	4	4	4	3	3	4	23%
East Side	**Northern end To Leylands Pde**	Unrestricted	**24**	5	6	10	10	9	7	6	8	9	9	8	33%
Tobruk St															
North Side	**Burwood Rd To Acacia Ln**	1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**4**	3	4	4	1	2	3	1	4	3	3	3	70%
Off-Street Location															
Burwood Rd - East Side	**RSL Customer Car Park**	Normal	**18**	2	1	6	12	18	16	11	8	8	9	9	51%
		Disabled	**2**	0	0	0	0	1	1	0	0	0	0	0	10%
Bridge Rd - North Side	**Public Car Park**	Unrestricted	**37**	30	33	32	34	35	35	32	33	35	34	33	90%
Bridge Rd - South Side	**Dynasty Customer Car Park**	Normal	**65**	47	65	64	65	65	65	62	58	59	58	61	94%
		Disabled	**12**	2	4	8	10	11	11	7	9	12	12	9	72%
Redman Pde - South Side	**Commuter Car Park**	City Rail	**27**	27	27	27	27	27	27	27	25	21	18	25	94%
		Disabled	**1**	1	1	1	1	1	1	0	0	0	0	1	60%
	Public Car Park	2Hr Free Car Park. 9am - 6:30pm Mon to Fri & 9am - 1pm	**21**	4	4	11	11	10	7	9	10	10	10	9	41%
Acacia St - West Side	**Customer Car Park**	Belmore Club	**65**	4	4	9	14	28	26	25	15	13	17	16	24%
Tobruk Ave - North Side	**Free Customer Car Park**	2Hr Free Car Park. 9am - 6:30pm Mon to Fri & 9am - 1pm	**43**	8	14	20	24	29	24	22	24	29	31	23	52%
		Disabled	**3**	1	2	3	1	3	2	3	3	3	2	2	77%
		Total parking available	**747**	367	435	490	497	547	527	483	477	481	461	477	64%
		% occupancy		49%	58%	66%	67%	73%	71%	65%	64%	64%	62%	64%	

Total No Parking/Clearway with Time Restraints		0	2	2	2	2	2	2	2	2	2
	Total Supply	747	745	745	745	745	745	745	745	745	745
	Total Parking	367	435	490	497	547	527	483	477	481	461
		49%	58%	66%	67%	73%	71%	65%	64%	64%	62%
LT No Parking/Clearway with Time Restraints		0	2	2	2	2	2	2	2	2	2
	LT Supply	510	508	508	508	508	508	508	508	508	508
	LT Parking	284	322	349	358	391	383	357	332	334	309
		56%	63%	69%	70%	77%	75%	70%	65%	66%	61%
All minus LT No Parking /Clearway with Time Restraints		0	0	0	0	0	0	0	0	0	0
	All minus LT Supply	237	237	237	237	237	237	237	237	237	237
	All minus LT Parking	83	113	141	139	156	144	126	145	147	152
		35%	48%	59%	59%	66%	61%	53%	61%	62%	64%
ST No Parking/Clearway with Time Restraints		0	0	0	0	0	0	0	0	0	0
	ST Supply	198	198	198	198	198	198	198	198	198	198
	ST Parking	82	108	136	133	149	136	118	137	144	148
		41%	55%	69%	67%	75%	69%	60%	69%	73%	75%
LT and ST Spaces with restraints		0	2	2	2	2	2	2	2	2	2
	LT and ST Supply	708	706	706	706	706	706	706	706	706	706
	LT and ST Demand	366	430	485	491	540	519	475	469	478	457
		52%	61%	69%	70%	76%	74%	67%	66%	68%	65%

Street	Between	Restrictions	Supply	9:00	10:00	11:00	12:00	13:00	14:00	15:00	Average	Average Occupancy
Burwood Rd												
West Side	**Southern end (460) To Leylands Pde**	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**10**	6	5	9	10	5	9	8	7	74%
		Bus Zone	**3**	0	0	2	2	0	0	0	1	19%
	Leylands Pde To Collins St	Loading Zone	**3**	2	3	1	0	4	7	6	3	110%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**8**	7	8	6	7	8	8	6	7	89%
	Collins St To Bridge Rd	1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**13**	12	11	8	10	12	13	13	11	87%
		Bus Zone	**3**	2	0	0	0	0	0	0	0	10%
	Bridge Rd To Dean Ave	Bus Zone	**4**	0	0	1	0	0	0	0	0	4%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**5**	5	6	6	4	5	5	5	5	103%
	Dean Ave To Station Rd	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**15**	14	10	10	11	12	10	11	11	74%
	Station Rd To Northern end (280)	Unrestricted	**5**	4	3	3	4	5	5	5	4	83%
East Side	**Northern end (280) To Etela St**	Unrestricted	**5**	3	2	5	3	2	3	0	3	51%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**5**	5	4	4	5	3	4	1	4	74%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**4**	4	3	4	3	3	4	3	3	86%
		Bus Zone	**3**	0	0	0	0	1	2	0	0	14%
	Etela St To Redman Pde	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**10**	8	10	6	7	9	12	8	9	86%
	Redman Pde To Tobruk Ave	Bus Zone	**3**	2	0	0	0	0	0	0	0	10%
	Tobruk Ave To Leylands Pde	No Parking 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	0	1	2	2	2	2	2	2	79%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	3	0	3	2	3	3	2	2	76%
		Mail Zone	**1**	0	1	0	1	1	0	0	0	43%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**15**	15	14	15	15	14	15	13	14	96%
		Taxi zone	**3**	1	0	0	1	1	0	0	0	14%
		Bus Zone	**3**	0	0	0	0	0	0	0	0	0%
	Leylands Pde To Southern end (462)	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**8**	7	5	3	5	8	8	7	6	77%
		No Parking		0	1	0	0	1	0	0	0	#DIV/0!
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**7**	7	6	5	5	7	5	5	6	82%
Paragon Ln												
West Side	**Leylands Pde To Collins St**	No Parking		2	0	1	1	1	0	0	1	#DIV/0!
	Collins St To Bridge Rd	No Parking		1	3	0	2	5	0	3	2	#DIV/0!
East Side	**Bridge Rd To Collins St**	No Parking		0	0	1	0	3	3	0	1	#DIV/0!
	Collins St To Leylands Pde	No Parking		0	0	0	0	0	0	0	0	#DIV/0!
Bridge Rd												
North Side	**Marie Ln To Burwood Rd**	Unrestricted	**28**	8	10	12	11	20	24	19	15	53%
		Taxi Zone	**2**	1	1	0	0	0	1	0	0	21%
		Taxi Zone	**2**	1	0	1	0	1	1	0	1	29%
South Side	**Burwood Rd To Paragon Ln**	Bus Zone	**3**	0	0	0	0	0	0	0	0	0%
	Paragon Ln To The Dynasty entrance	Loading Zone 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm	**1**	1	2	1	1	1	0	1	1	100%
		1/2 P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	0	1	3	1	3	3	2	2	62%
	The Dynasty entrance To Carpark	Unrestricted	**3**	2	1	2	1	1	3	1	2	52%
	Carpark exit To Marie Ln	Unrestricted	**8**	3	1	2	2	3	4	1	2	29%
Leylands Pde												
North Side	**Kent St To Paragon Ln**	Unrestricted	**4**	3	3	2	2	3	4	4	3	75%
		Bus Zone	**3**	0	0	0	0	0	0	0	0	0%
	Burwood Rd To Acacia Ln	1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	1	1	2	1	2	2	2	2	79%
	Acacia Ln To Acacia St	Unrestricted	**6**	4	4	3	4	6	6	4	4	74%
	Acacia St To Eastern end (15)	Unrestricted	**1**	1	1	1	0	0	1	3	1	100%
South Side	**Eastern end (24) To Drummond St**	Unrestricted	**8**	6	5	8	7	8	8	2	6	79%
	Burwood Rd To Paragon Ln	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**7**	5	6	4	5	6	7	3	5	73%
		Unrestricted	**8**	6	2	5	3	6	8	5	5	63%
Collins St												
North Side	**Western end (27) To Paragon Ln**	Unrestricted	**23**	20	18	23	21	22	23	23	21	93%
	Paragon Ln To Burwood Rd	1/2P	**3**	2	3	3	3	1	3	2	2	81%
		Disabled	**1**	1	0	1	1	1	0	1	1	71%
South Side	**Burwood Rd To Paragon Ln**	Loading Zone	**2**	2	1	1	0	2	3	1	1	71%
		1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	1	2	2	2	1	2	2	2	86%
	Paragon Ln To Western end (27)	Unrestricted	**18**	18	18	19	15	16	19	19	18	98%
Cleary Ln												
East Side	**Station Rd To Dean Ave**	No Stopping		2	0	0	0	2	0	0	1	#DIV/0!
Station Rd												
North Side	**Cleary Ave To Burwood Rd**	Unrestricted (but too narrow for parking)		1	1	1	1	0	0	0	1	#DIV/0!
		No Stopping		0	0	1	0	1	1	1	1	#DIV/0!
South Side	**Burwood Rd To Cleary Ln**	Unrestricted	**3**	3	4	3	2	3	3	2	3	95%
	Cleary Ln To Cleary Ave	Unrestricted	**4**	2	3	3	3	2	3	2	3	64%
Dean Ave												
North Side	**Cleary Ave To Clearly Ln**	Unrestricted	**5**	2	1	3	2	3	3	3	2	49%
	Clearly Ln To Burwood Rd	Unrestricted	**4**	2	2	3	1	3	4	3	3	64%

Street	Between	Restrictions	Supply	9:00	10:00	11:00	12:00	13:00	14:00	15:00	Average	Average Occupancy
South Side	**Burwood Rd To Rachel Ln**	Unrestricted	**4**	0	1	4	1	4	2	4	2	57%
	Rachel Ln To Cleary Ave	Unrestricted	**3**	1	2	3	2	3	2	3	2	76%
Cleary Ave												
West Side	**Southern end To Station Rd**	Unrestricted	**24**	11	8	10	9	10	8	8	9	38%
East Side	**Station Rd To Dean Ave**	Unrestricted	**18**	7	7	10	8	7	8	12	8	47%
	Dean Ave To Southern end	Unrestricted	**3**	3	3	3	2	2	2	3	3	86%
Etela St												
North Side	**Burwood Rd To Redman Ln**	Unrestricted	**3**	4	4	4	4	4	4	4	4	133%
South Side	**Redman Ln To Burwood Rd**	Unrestricted	**4**	3	3	2	2	2	2	2	2	57%
Redman Pde												
North Side	**Burwood Rd To Redman Ln**	1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	2	3	3	2	3	3	3	3	90%
	Redman Ln To Eastern end (26)	Unrestricted	**5**	5	5	5	5	6	5	3	5	97%
		P10min 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**2**	1	1	3	1	2	2	1	2	79%
		Unrestricted	**4**	3	4	0	3	4	4	2	3	71%
		P10min	**2**	0	2	2	1	2	1	2	1	71%
South Side	**Eastern end To Burwood Rd**	Disabled 90 Degree Rear To Kerb	**2**	2	0	0	0	0	0	0	0	14%
		Unrestricted 90 Degree Rear To Kerb	**24**	16	6	6	7	7	12	10	9	38%
		Disabled 90 Degree Rear To Kerb	**2**	1	0	0	0	0	0	0	0	7%
		1P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**3**	2	0	1	1	0	0	2	1	29%
Redman Ln												
West Side	**Redman Pde To Etela St**	No Parking		0	1	0	1	0	0	2	1	#DIV/0!
	Etela St To Northern end (10)	No Stopping		1	2	1	2	1	1	2	1	#DIV/0!
Acacia Ln												
West Side	**Leylands pde To Tobruk Ave**	No Parking		2	2	3	1	3	2	1	2	#DIV/0!
Acacia St												
West Side	**Leylands Pde To Northern end**	Unrestricted	**9**	4	2	2	3	9	9	9	5	60%
		Unrestricted	**15**	1	3	6	6	9	10	5	6	38%
East Side	**Northern end To Leylands Pde**	Unrestricted	**24**	7	6	5	6	18	22	14	11	46%
Tobruk St												
North Side	**Burwood Rd To Acacia Ln**	1/2P 8:30am - 6pm Mon to Fri & 8:30am - 12:30pm Sat	**4**	4	3	4	3	4	4	4	4	93%
Off-Street Location												
Burwood Rd - East Side	**RSL Customer Car Park**	Normal	**18**	16	13	12	14	17	18	16	15	84%
		Disabled	**2**	1	1	0	0	1	2	1	1	43%
Bridge Rd - North Side	**Public Car Park**	Unrestricted	**37**	18	23	16	10	18	27	28	20	54%
Bridge Rd - South Side	**Dynasty Customer Car Park**	Normal	**65**	37	40	37	32	54	56	65	46	71%
		Disabled	**12**	4	6	5	0	8	5	12	6	48%
Redman Pde - South Side	**Commuter Car Park**	City Rail	**27**	20	14	15	10	18	17	18	16	59%
		Disabled	**1**	0	0	0	0	0	0	0	0	0%
	Public Car Park	2Hr Free Car Park. 9am - 6:30pm Mon to Fri & 9am - 1pm	**21**	16	6	13	10	16	19	12	13	63%
Acacia St - West Side	**Customer Car Park**	Belmore Club	**65**	2	23	25	38	65	65	30	35	55%
Tobruk Ave - North Side	**Free Customer Car Park**	2Hr Free Car Park. 9am - 6:30pm Mon to Fri & 9am - 1pm	**43**	18	26	33	30	30	38	41	31	72%
		Disabled	**3**	2	3	0	0	2	2	0	1	43%
		Total parking available	**747**	422	410	437	403	561	606	523	480	64%
		% occupancy		56%	55%	59%	54%	75%	81%	70%	64%	

Total No Parking/Clearway with Time Restraints		2	2	2	2	0	0	0
	Total Supply	763	763	763	763	765	765	765
	Total Parking	422	410	437	403	561	606	523
		55%	54%	57%	53%	73%	79%	68%
LT No Parking/Clearway with Time Restraints		2	2	2	2	0	0	0
	LT Supply	526	526	526	526	528	528	528
	LT Parking	256	256	270	246	374	405	348
		49%	49%	51%	47%	71%	77%	66%
All minus LT No Parking /Clearway with Time Restraints		0	0	0	0	0	0	0
	All minus LT Supply	237	237	237	237	237	237	237
	All minus LT Parking	166	154	167	157	187	201	175
		70%	65%	70%	66%	79%	85%	74%
ST No Parking/Clearway with Time Restraints		0	0	0	0	0	0	0
	ST Supply	198	198	198	198	198	198	198
	ST Parking	145	136	152	144	159	180	158
		73%	69%	77%	73%	80%	91%	80%
LT and ST Spaces with restraints		2	2	2	2	0	0	0
	LT and ST Supply	724	724	724	724	726	726	726
	LT and ST Demand	401	392	422	390	533	585	506
		55%	54%	58%	54%	73%	81%	70%