TRAFFIC AND TRANSPORT **CONSULTANTS**

Leichhardt LGA Business Centres Parking Review Part A (Balmain)

Final Report

Prepared for Leichhardt City Council

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1 Introduction

1.1 Background

On the 26 April 2005 Council resolved to prepare a "Leichhardt Business Centres Car Parking Strategy" to determine the amount of off-street parking within the business centres including 'share drive' parking places that Council should provide.

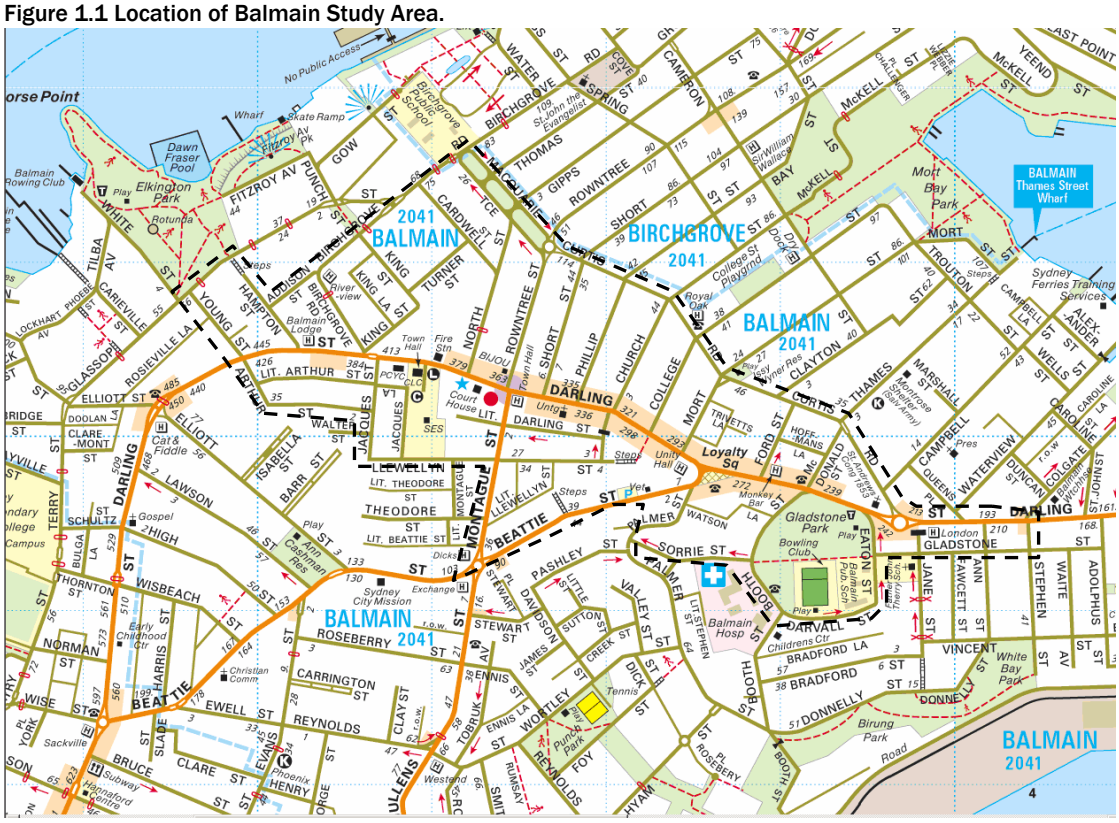
On the 23 August 2005 Leichhardt Council commissioned GTA Consultants to undertake a parking review study within the three business centres of Leichhardt, Balmain and Rozelle. Details of the Balmain interview surveys, parking space inventory, parking demand surveys and floor space / land use surveys are contained within this report with conclusions and recommendations relating specifically to this business centre.

1.2 Study Area

The study area is centred on the Balmain Business Centre and is bounded by Curtis Road, Birchgrove Road, Glassop Street, Young Street, Arthur Street, Llewellyn Street, Montague Street, Beatie Street, Sorrie Street, Booth Street, Darvall Street, Gladstone Street and Stephen Street. Darling Street dissects the study area.

The location of the study area is shown in Figure 1.1.

Figure 1.1 Location of Balmain Study Area.



The current land use is predominantly residential and commercial/retail. There is a concentration of retail activity on Darling Street including a Woolworths Supermarket with an attached off-street car park. There is also a concentration of restaurants and cafes on Darling Street.

1.3 Purpose of This Report

The purpose of this report is to provide Leichhardt Council with a summary of the survey results undertaken including the parking supply and demand, interview and land use surveys. These surveys then form the basis of the final parking review recommendations.

2 Existing Parking Conditions

2.1 Business Centre Area and Study Zones

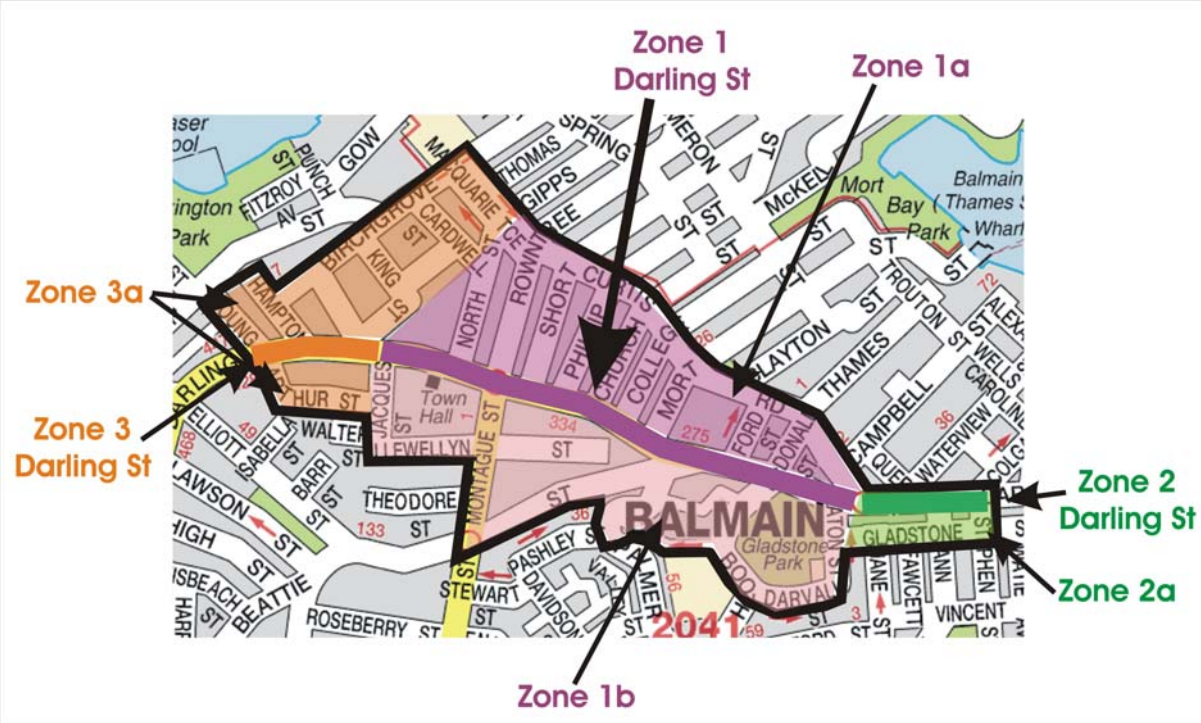
The study area has been divided into three (3) study zones which are illustrated in Figure 2.1. These zones were established to reflect the intensity of commercial / retail land use and the accompanying parking demand. The general function of the study zones are as follows:

Zone 1 – includes the central section of the study area and predominantly contains time restricted on street parking to serve the retail/commercial/hospitality facilities located along Darling Street. This zone also includes the Woolworths Car Park and an off-street parking facility on Beattie Street.

Zone 2 – located on the eastern margin of the study site between Eaton Street and Stephen Street. This zone contains a small amount of time restricted on street parking in Darling Street and unrestricted on street parking in the remainder of the zone.

Zone 3 – located on the western margin of the study site contains predominantly on street time restricted parking.

Figure 2.1 Balmain Business Centre Parking Zones



2.2 Overall Parking Supply

GTA Consultants compiled an inventory of publicly available on street and off street car parking within the study area.

The inventory identified a total of some 1,341 on street spaces and some 95 off street car parking spaces. Table 2.1 summarises the on street and off street parking supply by zone. The detailed inventory results are provided in Appendix A.

Table 2.1 Total Number of Parking Spaces in Balmain Business Centre (Refer Figure 2.1)

Zone	Location	Supply
ZONE 1	On Street	946
	Off Street	95
	Total	1,041
ZONE 2	On Street	77
	Off Street	-
	Total	77
ZONE 3	On Street	318
	Off Street	-
	Total	318
TOTAL	Off Street (7%)	95
	On Street (93%)	1,341
	Total (100%)	1,436

The table above shows that the greatest number of car parking spaces is in Zone 1 which contains The Woolworths and Beattie Street Car Parks. These car parks account for approximately 7% of all public parking in the Balmain Business Area.

Of the total number of car parking spaces within the study area, 7% consist of off street parking and 93% consist of on street parking.

A summary of the parking management within the Balmain Business Centre is contained in Table 2.2.

Table 2.2 Parking Spaces Management in Balmain Business Centre

Zone	Management				
	2P	4P	2P/4P	Unrestricted	Other
ZONE 1	307	450	179	29	76
ZONE 2	36	-	-	41	-
ZONE 3	251	42	-	20	5
TOTAL PARKING SPACES	594	492	179	90	81
(% Total Spaces)	(41.4%)	(34.3%)	(12.5%)	(6.3%)	(5.6%)

The time restricted parking generally excludes resident parking.

The following summarises the parking management in the Balmain Business Centre:

- 2P parking generally operates between 8:00am-10:00pm and accounts for 41% of all spaces in the Balmain Business Centre with the greatest number in Zone 1.
- 4P parking generally operates between 8:00am-10:00pm and accounts for 34% of all spaces in the Balmain Business Centre with the greatest number in Zone 1.
- 2P/4P parking has a 2P restriction between 8:00am-6:00pm and a 4P restriction between 6:00pm-10:00pm. They account for 12% of all spaces in the Balmain Business Centre, and are found only in Zone 1.
- Unrestricted parking spaces which are located in Macquarie Terrace, Jane Street, Ann Street and Stephen Street account for 6% of all spaces in the Balmain Business Centre with the greatest number in Zone 2.
- Other parking spaces which include disabled spaces, loading zones, work zones and 5 minute restrictions account for 6% of all spaces in the Balmain Business Centre with the greatest concentration in Zone 1.

2.3 Overall Parking Demand

Parking demand surveys were undertaken by GTA Consultants within the study area during the following periods:

- Friday 9th September 2005 from 7:00am - 10:00pm
- Saturday 10th September 2005 from 7:00am - 10:00pm

Friday survey results are summarised in Table 2.3 and Saturday in Table 2.4 with the detailed inventory and parking demand provided in Appendix A.

Table 2.3 Summary of Balmain Peak Public Parking Demand Surveys - Friday

ZONE	Parking Supply	Parking Demand							
		7:00am	9:00am	11:00am	1:00pm	3:00pm	5:00pm	7:00pm	9:00pm
1	On Street (946)	563 (60%)	636 (67%)	732 (77%)	751 (79%)	725 (77%)	697 (74%)	737 (78%)	735 (78%)
	Off Street (95)	20 (21%)	92 (97%)	90 (95%)	93 (98%)	92 (97%)	92 (97%)	83 (87%)	77 (81%)
	Total (1041)	583 (56%)	728 (70%)	822 (79%)	844 (81%)	817 (79%)	789 (76%)	820 (79%)	812 (78%)
2	On Street (77)	43 (56%)	69 (90%)	77 (100%)	65 (84%)	68 (88%)	66 (86%)	64 (83%)	63 (81%)
3	On Street (318)	184 (58%)	209 (66%)	202 (64%)	193 (61%)	203 (64%)	215 (68%)	213 (67%)	219 (69%)
Total	On Street (1341)	790 (59%)	914 (68%)	1,011 (75%)	1,009 (75%)	996 (74%)	978 (73%)	1,014 (76%)	1,017 (76%)
	Off Street (95)	20 (21%)	92 (97%)	90 (95%)	93 (98%)	92 (97%)	92 (97%)	83 (87%)	77 (81%)
	Total (1436)	810 (56%)	1,006 (70%)	1,101 (77%)	1,102 (77%)	1,088 (76%)	1,070 (75%)	1,097 (76%)	1,094 (76%)

Note: Percentages in brackets are demand rates for separate on and off street parking.
Peak parking demand over 80% is highlighted.

Table 2.3 indicates that:

- Parking demand in the area is relatively high with overall demand peaking at 77%.
- The 7:00am count was designed in order to provide a measure of on street parking demand associated with local residences. It was timed so as to record parking demand prior to residents leaving for work and the incoming parking activity associated with the local retail/commercial/hospitality facilities. The results indicate that 56% of on street parking is used by local residents.
- Parking demand was consistently high over the course of the study period. The final count 9:00pm-10:0pm indicates a demand similar in volume to the overall peak demand. This suggests that the hospitality facilities in the study area are high weekend evening trip attractors.
- The peak demand for Zone 1 of 81% occurred between 1:00pm-3:00pm, this is indicative of a Friday lunch time peak. The demand in Zone 1 remained consistent through most of the study period; between 11:00am-10:00pm the overall demand fluctuated by a maximum of 5% (76% - 81%).
- The demand for the off street parking was particularly high peaking at 98% occupancy and maintaining an occupancy rate in excess of 80% between 9:00am-10:00pm. This demand rate indicates that there may be an under supply of off street parking in the Balmain Town Centre.
- The peak demand of 100% recorded in Zone 2 occurred between 11:00am-1:00pm. The demand for parking in Zone 2 was consistently high maintaining an occupancy rate in excess of 80% between 9:00am-10:00pm. This may indicate that the unrestricted parking spaces in Zone 2 are being used for retail purposes.
- Zone 3 which is more peripheral to the Balmain Town Centre experienced a peak demand of 69% between 9:00pm-10:00pm. The demand for parking in Zone 3 was consistent through most of the study period, between 9:00am-10:00pm the overall demand fluctuated by a maximum of 8% (61%-69%).

Table 2.4 Summary of Balmain Peak Public Parking Demand Surveys - Saturday

ZONE	Parking Supply	Parking Demand							
		7:00am	9:00am	11:00am	1:00pm	3:00pm	5:00pm	7:00pm	9:00pm
1	On Street (946)	564 (60%)	748 (79%)	802 (85%)	830 (88%)	798 (84%)	715 (76%)	764 (81%)	879 (93%)
	Off Street (95)	21 (22%)	93 (98%)	93 (98%)	93 (98%)	95 (100%)	91 (96%)	92 (97%)	95 (100%)
	Total (1041)	585 (56%)	841 (80%)	895 (86%)	923 (89%)	893 (86%)	806 (77%)	856 (82%)	974 (94%)
2	On Street (77)	36 (47%)	59 (77%)	64 (83%)	71 (92%)	66 (86%)	51 (66%)	57 (74%)	66 (86%)
3	On Street (318)	235 (74%)	224 (70%)	228 (72%)	247 (78%)	253 (80%)	264 (83%)	233 (73%)	240 (76%)
Total	On Street (1341)	835 (62%)	1,031 (77%)	1,094 (82%)	1,148 (86%)	1,117 (83%)	1,030 (77%)	1,054 (79%)	1,185 (88%)
	Off Street (95)	21 (22%)	93 (98%)	93 (98%)	93 (98%)	95 (100%)	91 (96%)	92 (97%)	95 (100%)
	Total (1436)	856 (60%)	1,124 (78%)	1,187 (83%)	1,241 (86%)	1,212 (84%)	1,121 (78%)	1,146 (80%)	1,280 (89%)

Note: Percentages in brackets are demand rates for separate on and off street parking.
Peak parking demand over 80% is highlighted.

Table 2.4 indicates that:

- The parking demand in the area was very high, peaking at 89%.
- Parking occupancy rates recorded on the Saturday were predominantly higher than those recorded on the Friday. This suggests that peak town centre activity occurs on Saturday.
- The 7:00am count indicates a demand of 60% and is thus in keeping with the results recorded on Friday (56%).
- The peak demand on the Saturday of 89% was recorded in the final period 9:00pm-10:00pm, suggesting a high weekend parking demand associated with the hospitality facilities.
- The peak parking demand for Zone 1 of 94% occurred between 9:00pm-10:00pm. The parking demand in Zone 1 remained consistently high through most of the study period (9:00am-10:00pm) with occupancy rates between 77%-94%.
- Demand for off street parking peaked at 100%. The demand for off street parking remained high through most of the study period; between 9:00am-10:00pm the overall demand fluctuated by a maximum of 4% (96%-100%). This high demand again highlights the possible under supply of off street parking in the Balmain Town Centre.
- In Zone 2 the peak demand of 92% recorded occurred between 1:00pm-3:00pm. Occupancy rates through the course of the day (9:00am-10:00pm) were in the order of 66%-92%.
- Zone 3 experienced a peak demand of 83% between 5:00pm-7:00pm. Occupancy rates through the course of the day were in the order 70%-83%.

The Friday and Saturday car parking demand, by time and zone, is represented diagrammatically in Figures 2.1, 2.2, 2.3 and 2.4.

Figure 2.1 Overall Parking Demand Rates by Type Friday 09/09/05

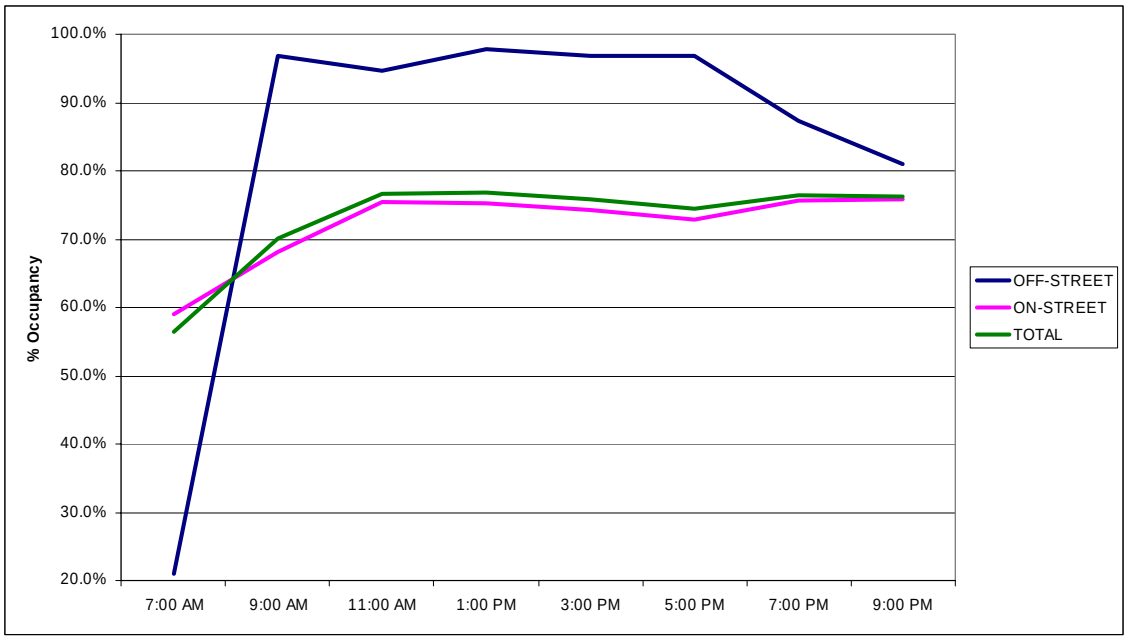


Figure 2.2 Overall Parking Demand Rates by Zone Friday 09/09/05

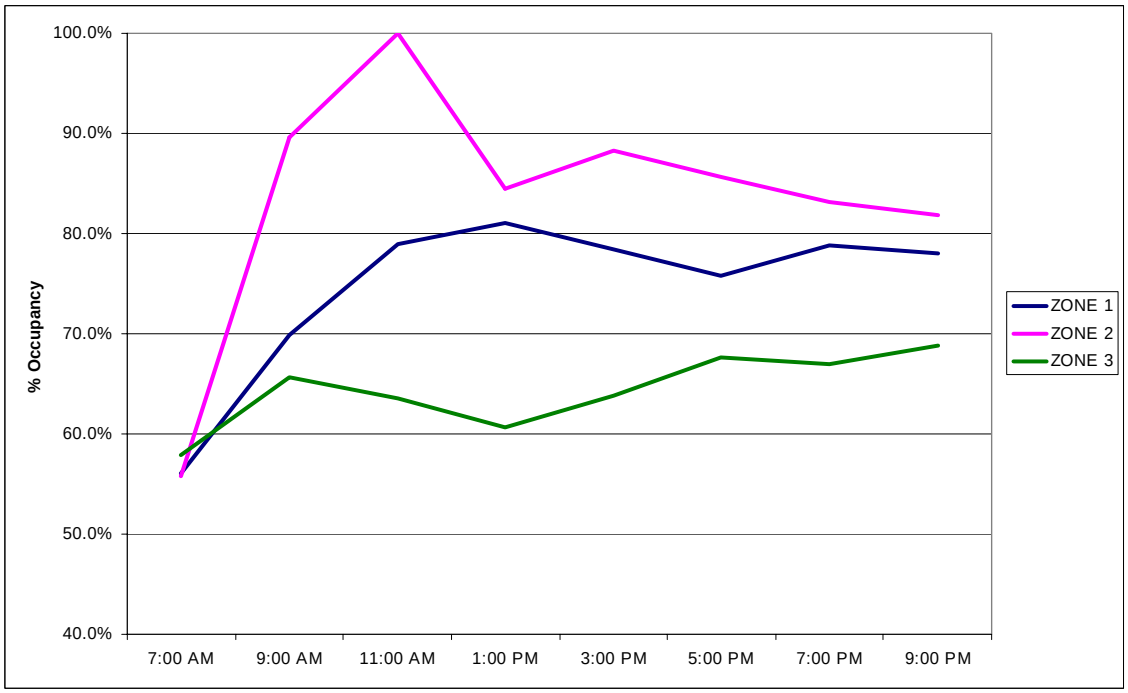


Figure 2.3 Overall Parking Demand Rates by Type Saturday 10/09/05

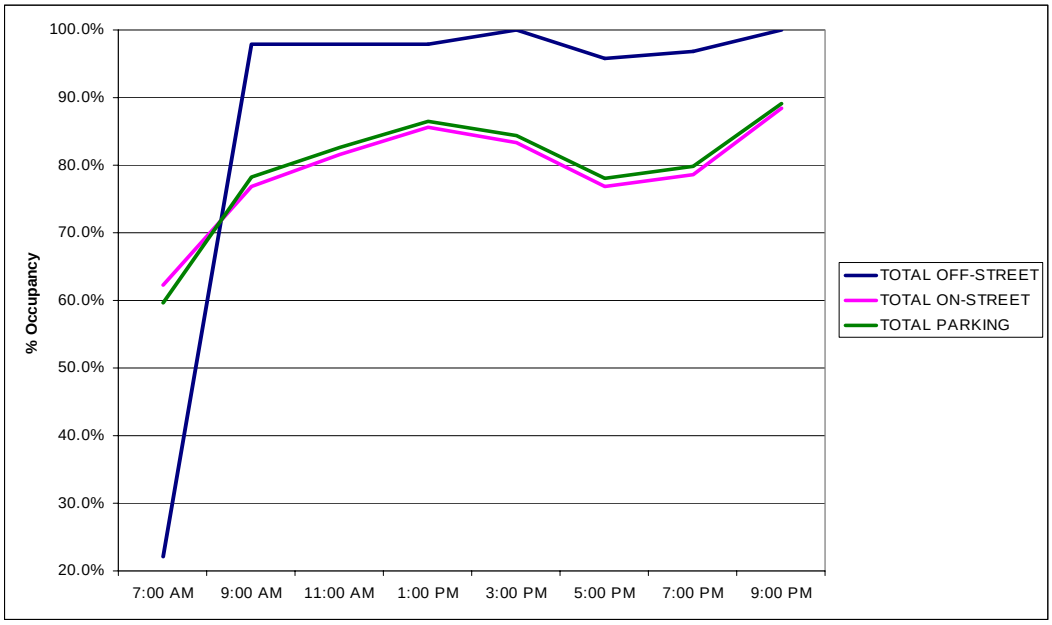
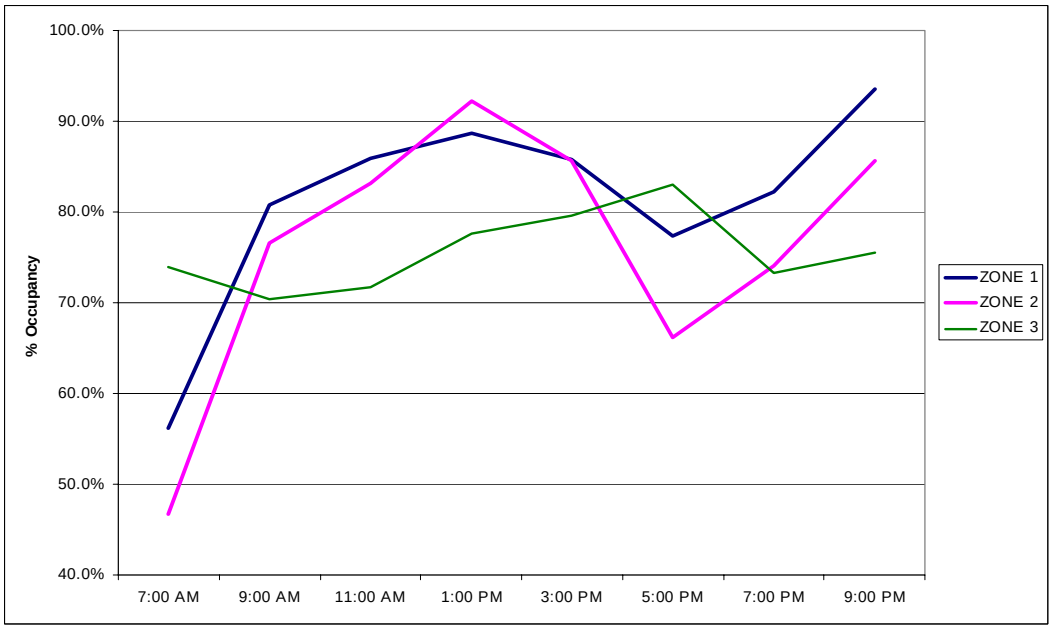


Figure 2.4 Overall Parking Demand Rates by Zone Saturday 10/09/05



2.4 Summary of Overall Parking Supply and Demand

It should be noted that parking supply is generally not designed for the peak parking demand and therefore it is important to take note of the results in Figures 2.1-2.4. The majority of the peak parking demand occurs on the Saturday and in most cases between 9:00pm and 10:00pm. More detail of peak car parking demand by zone and time period is provided below.

- Car park demand rates are affected by location, function and time, and depending on these, a car parking space can be shared by several users – thus 'shared parking'[1]
- Peak parking demand in the Balmain Town Centre was relatively high, with overall peak demand in the order of 77% on the Friday and 89% on the Saturday. These results indicate that peak town centre activity occurs on Saturdays.
- The 7:00am traffic count was designed to provide a measure of on street parking demand associated with local residences. It was timed so as to record parking demand prior to employees leaving for work and the parking activity associated with the local retail/commercial/hospitality facilities. The Friday and Saturday survey suggest that approximately 60% of the available on street parking us used by local residences.
- Both the Friday and Saturday surveys record a very high parking demand in the final study period (9:00pm – 10:00pm). This suggests the local hospitality facilities are high weekend evening trip attractors.
- Zone 1 experienced a peak parking demand of 81% between 1:00pm-3:00pm on Friday and 94% between 9:00pm-10:00pm on Saturday. During the Friday survey the demand remained consistently high during most of the day in the order of 76%-81%. Occupancy rates recorded on the Saturday were generally of the order of 77%-94%.
- Peak parking demand for the off street parking facilities located in Zone 1 was in the order of 100% on Friday and Saturday. This occurred in the middle of the day on Friday and late at night on Saturday. Parking demand remained consistently high through the course of both days and suggests that there may be insufficient provision of off street parking in the Balmain Town Centre.
- Zone 2 experienced a peak parking demand of 100% in the middle of the day on Friday and 92% in the early afternoon on Saturday. Parking demand in this zone was consistently high in the order of 80%-100% on Friday and 66%-92% on Saturday. Zone 2 contains a number of unrestricted parking spaces and these results suggest that it they may be used for retail/commercial/hospitality purposes.
- Zone 3 is more peripheral to the Balmain Town Centre and the demand rates are slightly lower than for Zones 1 and 2. Zone 3 experienced a peak demand of 69% between 9:00pm-10:00pm on Friday and 83% between 5:00pm-7:00pm on Saturday. During Friday the parking demand remained consistent during most of the day in the order of 60%-69%. On Saturday occupancy rates were of the order of 70%-83%.

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[1] *Austroads (1994) Guide to Traffic Engineering Practices – Parking* – states that parking needs should not be calculated by adding the individual land use needs in mixed use areas

3 Interview Surveys

Surveys were conducted on Friday 7th October 2005 during the day to ascertain the parking and transport habits of two groups of users of the Balmain Business Centre:

(i) Business Centre Shoppers /Visitors;

(ii) Business Centre Workers.

A copy of the interview sheets and respondent summaries is included in Appendix B.

3.1 Shopper/Visitor Interviews

On street interview surveys were undertaken on Friday 7th October 2005 along the main shopping strip of Darling Street. Fifty (50) interview responses were obtained. All were usable. The purpose of these surveys was to:

- ascertain the various modes of travel used;
- define the purpose of the trips to Balmain Business Centre;
- determine their home postcode;
- ascertain the length of stay in the Centre; and
- define the parking habits of those who access the Centre by car.

Shoppers/visitors nominated the following modes of travel used to access the Business Centre:

- 56% drove cars;
- 28% walked;
- 10% utilized a bus;
- 4% were car passengers;
- 2% rode a bicycle
- None caught a taxi or rode a motorcycle.

Of the 56% interviewees who drove their cars, 43% parked in the off-street carparks and 58% utilised the on-street parking. According to the results, the utilisation of the two off-street carparks, Woolworths and Beattie Street Council carpark, was almost even. It should be noted that both these carparks are located in close proximity to the Balmain Centre. It is encouraging to see that more than a quarter of the shopper/visitors interviewed, walked to the centre, suggesting a significant portion of shoppers are drawn from the local catchment.

Interviewees defined the purpose of their trips as follows (multi-purpose trips are included):

- Shopping – 41%;
- Banking – 10%;

- Medical – 18%
- Services eg real estate, hairdresser – 12%
- Recreation/Social – 16%
- Other – 4%
- Services eg accountant– None

In terms of expected duration of stay the results were as follows:

- Less than 30 minutes – 36%
- 30 minutes to an hour – 12%
- 1 hour to 2 hours – 38%
- 2 hours to 3 hours – 10%
- 3 hours or more – 4%

The intended duration of stay for approximately 86% of the respondents was 2 hours or less. This gives an indication of the average possible parking time management in the centre with a predominantly 2 hour demand for parking within area.

From the results of the interviewees' home postcode, the majority of them were from Balmain.

While almost equal number of interviewees, who drove to the Centre, parked in the on-street parking in the Zone 1 and Zone 2 of Darling Street, none have parked in the Zone 3 of Darling Street. Among the on-street parking in the defined Zones, Zone 1a appeared to be the most attractive to them.

3.2 Worker Interviews

A total of 100 survey sheets were distributed to workers in retail and commercial premises in the Balmain Business Centre. These were distributed on Friday 7th October, of these a total of 74 were returned. The workers were asked to fill out the questionnaire which was collected later that day. The intent of these surveys was to:

- ascertain the various modes of travel used by the workers;
- ascertain whether the respondent worked part-time or full time;
- determine the home postcode of workers
- ascertain the length of stay in the Balmain Business Centre; and
- define the parking habits of workers who access the centre by car.

Workers nominated the following modes of travel used to access their work place (some are multi-modal):

- 68% drove a car;
- 5% were car passengers;
- 11% utilized buses;
- 16% walked; and

- None caught a taxi or rode a bicycle/motor bike

The survey indicated 66% of the respondents were employed full-time and 34% part-time.

In terms of expected duration of stay the results were as follows:

- less than 3 hrs – 3%
- 3 hours to 4 hours – 1%
- 4 hours to 6 hours – 15%
- 6 hours to 8 hours – 30%
- Over 8 hours – 51%

By far the greatest majority travelled by car (73%). Of the 68% respondent drivers, the large majority (79%) utilised the on-street parking and less than 25% parked in the off-street carparks. This split between on-street and off-street parking further indicates that majority of workers who drives to work, utilise on-street parking in the retail hub for all-day parking. This situation points to a poor management of premium available parking space, which could be used by visitors to the centre who frequent the businesses and generate the local economy.

Among the on-street parking areas, Zone 1 Darling Street and Zone 1a attracted 36% of workers who drove to work. Only 8% parked in the on-street parking areas in Zone 3.

From the above results, although the majority of workers (81%) parked longer than 6 hours, only 21% who parked utilised the off-street parking in the area. About 21% parked on-street along Darling Street. In view of the fact that only 4% worked less than 4 hours, this situation indicates that the workers either overstayed or moved their cars in parking areas which have either 4 hours or less time restriction along Darling Street,

From the results of the interviewees' home postcode, 26% were from Balmain and 10% from Leichhardt. The majority (40%) are from outside the Leichhardt LGA.

3.3 Summary of Interview Surveys

The results from the interview surveys are summarised below as follows:

1. Shoppers/Visitors to Centre
   - Approximately 60% of shoppers access Balmain Centre by car with approximately 28% walking. About 10% used public transport.
   - 42% of trips included shopping, while other typical centre based activities such as banking (10%), medical (18%) and local services (12%) accounted for smaller mentions. A considerable percentage of trips made were for recreational/social purposes (16%).
   - The surveys indicate that the majority (86%) spent less than 2 hours in Balmain Centre during the day.
   - Of those who drove cars, 43% utilised off-street parking while 58% secured on-street parking.
   - Most of the visitors/shoppers came from Balmain.

2. Workers at Centre

- This survey revealed that more local workers use the car (73%) than the other groups – only 11% use public transport.
- A considerable percentage of workers (16%) walked to work;
- The large majority of people working in Balmain (approximately 66%) are full time employees.
- The duration of stay for the majority of workers (80%) was more than 6 hours, which included 50% staying over 8 hours.
- Of the car drivers only 21% park in the off-street carparks while 79% secured on-street parking.
- Most of the workers were from outside the Leichhardt area while 26% were from Balmain.

From the survey, it would appear that workers are using the on-street parking in the retail hub in the Balmain Centre area for all day parking, rather than utilising off-street parking. This points to poor management of premium available on-street parking space, which could be used by visitors to the centre who frequent the businesses and generate the local economy.

4 Land Use and Floor Space Surveys

4.1 Preamble

The purpose of these surveys were to provide land use information for the business centre so that the statutory parking requirements could be calculated and then compared against the actual on and off street parking supply as surveyed on site and as discussed in section 2 of this report. This would give some indication as to the level of shortfall or over supply of parking within the centre and would provide Leichhardt Council with important information on which to base decisions regarding the provision of parking within the centre.

A zoning plan, aerial photography and a listing of properties zoned "business use" within the study area was provided by Leichhardt Council to assist with the land use surveys.

The surveys were undertaken over the weekend of the 1st and 2nd of October 2005 to determine the existing commercial and retail floor space within the Balmain business centre. This survey identified:

- The types of the land uses within the Balmain business centre,
- The proportion of floor space that each land use occupied within the overall building; and
- Any private or unofficial off street car parking spaces associated with these land uses.

Further follow up surveys were also undertaken to gather land use information that could not initially be obtained as a result of restricted access to certain properties at the time.

(It should be noted that a very small percentage of land use information was not obtained but this would have an insignificant affect on the overall final result.)

The location of these various land uses were transposed onto aerial photography so that the actual gross floor area (GFA) of each commercial/retail property could be measured on GTA Consultants GIS system. This is discussed further in section 4.2.

There were a total of 301 business properties identified and surveyed within the Balmain Business Centre. These consisted of a wide range of land uses within the business centre of Balmain including commercial, retail, professional consulting rooms, restaurants/cafes, community facilities, hotels and clubs. Details of the various land uses are broken down as follows:-

- Clubs: 8
- Commercial Premises: 49
- Hostel: 1
- Industry: 3
- Hotels: 1
- Professional Consulting Rooms: 23
- Restaurant: 45
- Retail/Shops: 147

- Auditoriums: 3
- Not Categorised: 4

For various reasons (primarily due to access restrictions) there were 28 (or 9%) of the 301 business properties where land use information could not be obtained. There were also two additional "private" parking spaces recorded at 1 Little Darling Street. (Land use data and aerial plans are provided in Appendix C).

4.2 Gross Floor Areas

The total GFA of non-residential premises within the Balmain Business Centre is approximately 43104m^2. The distribution of different types of land uses among the zones is given in the Table 4.1 below.

Table 4.1 Land use distribution

Zone	Clubs	Commercial	Hostel	Industry	Hotel	Professional Consulting	Restaurant	Retail/Shops	Auditorium
1a	40%	34%	0%	41%	0%	15%	51%	33%	0%
1b	60%	38%	0%	0%	100%	47%	31%	40%	93%
2	0%	6%	0%	0%	0%	4%	3%	7%	7%
3	0%	22%	100%	59%	0%	35%	16%	20%	0%
Total Area (m^2)	1,211	9,487	1,364	551	620	2,691	5,579	18,303	3,298

Accordingly, the Zone 1b primarily consists of land uses such as Clubs, Hotel and Auditoriums which require relatively more parking spaces.

4.3 Statutory Parking Requirements

Leichhardt Councils Development Control Plan 2000 (Part A) stipulates specific parking rates for developments within the Leichhardt Local Government Area. These specific parking rates have been applied to the corresponding land uses so that the level of statutory parking required for the Balmain Business Centre in it's current form can be calculated. (This information is also included in Appendix C).

Table 4.2 Parking Rates – LEICHHARDT DCP Part A

Land Use	Statutory Parking Requirements			
	Staff (per staff)		Visitor / Shoppers (Per 100m² GFA)	
	Minimum	Maximum	Minimum	Maximum
Commercial	-	-	1.5	3
Clubs	(1)	(1)	5	10
Restaurants	0.44	0.55	5 2.5	10 5
Industrial	-	-	1	2
Shops	(1)	(1)	1.5	3
Professional Services	0.44	0.55	2	4
Auditorium	(1)	(1)	4	8
Hotel	(1)	(1)	5 3	10 5
Service Station	(1)	(1)	2 spaces/work bay 2 spaces/100m² ancillary services	4 spaces/work bay 10 spaces/100m² ancillary services

(1) Min - 80% of total staff

Max – 100% of total staff (depending on access to public transport).

4.4 Parking Supply Analysis

4.4.1 Applying the Statutory Parking Requirement

The statutory parking requirement for each zone in the Centre was calculated based on the parking rates provided in the Leichhardt DCP and the statutory requirement was then compared with the current parking supply. In the analysis, parking requirements for staff are excluded due to lack of data available. It should also be noted that such demand, specifically all-day staff parking, would need to be accommodated in off-street parking areas.

As the operating hours of different land uses vary, the following assumptions were made in the analysis to derive day time and night time statutory parking requirements of the DCP as follows:

Operating Hours	*Land use*
Day time only	Commercial, Professional services, Shops (50% of total), industrial
Night time only	Clubs
Day and night time	Restaurants, Shops (50%), Hotels, Hostels, Auditoriums

Using the above, the day and night time statutory parking requirements and current parking supply for each zone were calculated and are shown in Table 4.3.

4.4.2 Impact of Resident and Business Permit Parking

Due to the lack of off-street residential parking in the area, substantial on-street parking is a result of resident cars in the street. The parking occupancy surveys for the Balmain Business Centre (conducted by GTA) show that about 62% of on-street parking is occupied at 7am. This is interpreted as the resident on-street parking demand impacting on the on-street parking supply which overlaps with evening and late night visitor parking around the centre (say from 9pm-7am).

In addition, residential, or permit holder, parking is also shown to impact on the on-street parking supply during the day, as found by parking occupancy surveys conducted by Leichhardt Council. These surveys found that, on average, about 55% of on-street parking in side streets is occupied by permit holders during the hours of 9am and 6pm, with Darling Street permit holder on-street parking at 8%. This results in a reduced number of available on-street parking spaces during the day.

In order to estimate the actual parking supply for the daytime period, which we have named the *net daytime* parking supply, we have followed the process below:

- Resident/permit holder parking occupancy (as measured at regular intervals throughout the day) is taken from the supply of on-street parking;
- To this remaining on-street supply, we have added all of the available off-street public parking (assuming that residents/permit holders are unlikely to park in off-street car parks).

In order to estimate the actual parking supply for the night time period, which we have named the *net night time* parking supply, we have followed the process below:

- Resident/permit holder parking occupancy (as measured at 7am) is taken from the supply of on-street parking;
- To this remaining on-street supply, we have added all of the available off-street public parking (assuming that residents/permit holders are unlikely to park in off-street car parks).

The *gross* parking supply refers to the total number of parking spaces, including resident and permit holder parking, and all other public parking.

Table 4.3 summarises the above calculations.

Table 4.3 Parking Demand and Supply

Zone	Maximum requirement		Minimum requirements		Parking Supply			Surplus / (Deficiency)	
	Day time	Night time	Day time	Night time	Gross	Net day time	Net night time	Net daytime	Net night time
1a	493	486	246	243	482	243	183	(250) (DCP max) (3) (DCP min)	(303) (DCP max) (60) (DCP min)
1b	757	674	378	337	559	331	271	(426) (DCP max) (47) (DCP min)	(403) (DCP max) (66) (DCP min)
2	76	54	38	27	77	35	30	(41) (DCP max) (3) (DCP min)	(24) (DCP max) 3 (DCP min)
3	387	280	194	140	318	143	121	(244) (DCP max) (51) (DCP min)	(159) (DCP max) (19) (DCP min)
All Zones	1,713	1,494	856	747	1,436	752	605	(961) (DCP max) (104) (DCP min)	(889) (DCP max) (142) (DCP min)

From the above table, the *net daytime* parking supply for the Balmain business centre as a whole is:

- under-catered to by 961 parking spaces according to the statutory maximum parking requirement;
- under-catered to be 104 parking spaces according to the statutory minimum requirement ;
- none of the zones comply with either the maximum or minimum statutory requirements.

The *net night time* parking supply for the Balmain business centre as a whole is:

- under-catered to by 889 parking spaces according to the statutory maximum parking requirement;
- under-catered to be 142 parking spaces according to the statutory minimum requirement ;
- only Zone 2 complies with the minimum statutory requirement, while none of the zones comply with the maximum statutory requirement.

The difference in the DCP maximum and minimum requirements are substantial as illustrated by the fact that even if on-street parking permits were abandoned, then the parking supply for the Balmain business centre as a whole (*gross*) is:

- under-catered to by 277 parking spaces according to the statutory maximum parking requirement during the daytime; while
- there are 580 more parking spaces than the minimum requirement.

The current parking supply in all zones is below the maximum parking requirement. However, for Zone 1b, the current parking supply is significantly below the maximum parking requirement. The results of the occupancy survey given in Table 2.3 indicates high occupancies in on-street and off-street parking areas in Zone 1, particularly during normal business hours in weekdays and to a lesser extent at night time on Saturday, reaching about 89% occupancy in the off street car parking in Zone 1 during the day time.

Overall, the Balmain centre is under-catered in parking supply taking the statutory requirements into consideration. Currently, the majority of parking is on-street, and results show that this has become highly inadequate to cater for the parking demand.

4.4.3 Statutory Parking Requirement Comparisons

The table below has been constructed by applying parking rates from other inner city LGAs to the Balmain Centre. The table shows that only Leichhardt LGA has an operating maximum and minimum rate; the South Sydney rates were also proposed to have maximums and minimums prior to the amalgamation with Sydney City. The minimum parking rates of Leichhardt LGA are generally lower than the other comparative LGAs, and only the minimum rates proposed by the South Sydney Transport DCP were to be more restrictive. The Leichhardt maximum rates are double the minimum rates and in this they are unusual.

Table 4.4 Application of Visitor/Shoppers Parking Rates (per 100 sqm) to Select Land Uses

Land Use	Gross Floor Area	Leichhardt LGA		Marrickville LGA		(previous) South Sydney LGA		Woollahra LGA		RTA Rate	
						Proposed					
		Max	Min			Max	Min				
Commercial	9487	3	1.5	2.2		2.0	0.8	2.5		2.5	
Retail/Shops	18303	3	1.5	2.2		2.5	1.5	3.3		6.1	
Clubs	1211	10	5	16.7		5.0	5.0	20		0	
Restaurants	5579	10	5	2.2		2.5	1.5	15.0		15.0	
Industrial	551	2	1	1.1		1.3	0.8	2.0		0.3	
Prof. Services	2691	4	2	2.2		4.0	3.2	4.0		2.5	
Hotel	620	10	5	16.7		4.0	4.0	3		0	
Total parking spaces required		1693	847	1112	1112	987	610	2057	2057	2260	2260
Comparison with Leichhardt Parking Max Min				-34%	+31%	-42%	-28%	+22%	+143%	+50%	+199%

In South Sydney the rates were linked directly to public transport accessibility which was determined as highest within 600m of a railway station, then linked to the number and frequency of bus routes. Balmain is the least accessible Centre by public transport to the wider metropolitan area for two reasons:

- it has no train station within a reasonable (600m) distance, and
- it must rely on the linking bus services to connect to the wider metropolitan area by public transport. The use of public transport for evening recreational purposes would be expected to be very low, particularly considering that not many of the frequent bus services run directly from Victoria Rd to Darling Street, and instead require a change of buses at Rozelle.

The proposed South Sydney parking rates would therefore not be appropriate for the Balmain Centre. Yet to accommodate more parking presents Balmain Centre with a dilemma, as it has greater constraints than the other two centres in relation to overall available space as it is on a peninsula and has significant topographical and heritage constraints. To achieve the DCP maximum amount of car parking, and assuming that there is no residential on street parking demand, an additional 277 spaces would be required overall. However considering the high level of permit parking both day and night in the area, to comply with the DCP, some 961spaces would be required - this is considered unsustainable.

5 Summary and Recommendations

5.1 Parking Supply

The Balmain Business Centre provides a *gross* total of 1,436 public car parking spaces which includes 1,341 spaces on-street and 95 off-street parking spaces. For the on-street parking, 2P accounts for 41%, 4P for 34%, 2P/4P for 13% and the rest is for 1P or less and unrestricted.

The occupancy surveys indicated that on Friday and Saturday, 59% and 62% of on-street parking is occupied before normal business hours (i.e. 7am). Council's records show that during daytime hours (i.e. 9am-6pm), about 55% of on-street parking in side streets and 8% of on-street parking on Darling Street are occupied by residents. The peak parking time is therefore likely to converge with residential and some business permit holders' on-street parking demand.

The above results clearly indicate that permit holders occupy a large percentage of the limited on-street parking in the Balmain Business Centre, which obviously impacts on visitor parking demand both in the daytime and night time.

Eligible Business like residents are entitled to apply for a maximum of 2 Business permits (no main street parking) and can also apply for a Loading Permit to assist with deliveries as there are no Loading Zones. There have been some rare cases where businesses and community organisations have been issued more than 2 permits and these are assessed on valid reasons such as safety issues e.g. staff finishing at 3am and having to walk several blocks to their vehicle with no reasonable parking alternative. The survey has identified 301 businesses currently operating in the Balmain Business Centre. If the limited on-street parking is allowed to be utilised by the residential and business occupiers in the area, it is unlikely that visitors have a fair share of the current parking stock.

When consideration is made for resident and permit holder occupancy, the number of public car parking spaces during the daytime, nominated as the *net daytime* parking supply, is reduced from 1,436 to 752 spaces. The number of public car parking spaces during the night time, nominated as the *net night time* parking supply, is reduced further to 605 spaces.

Overall, the area that has the greatest parking shortfall is Zone 1b, which lies south of Darling Street in the block between Jacques Street and Eaton Street.

5.2 Parking Demand

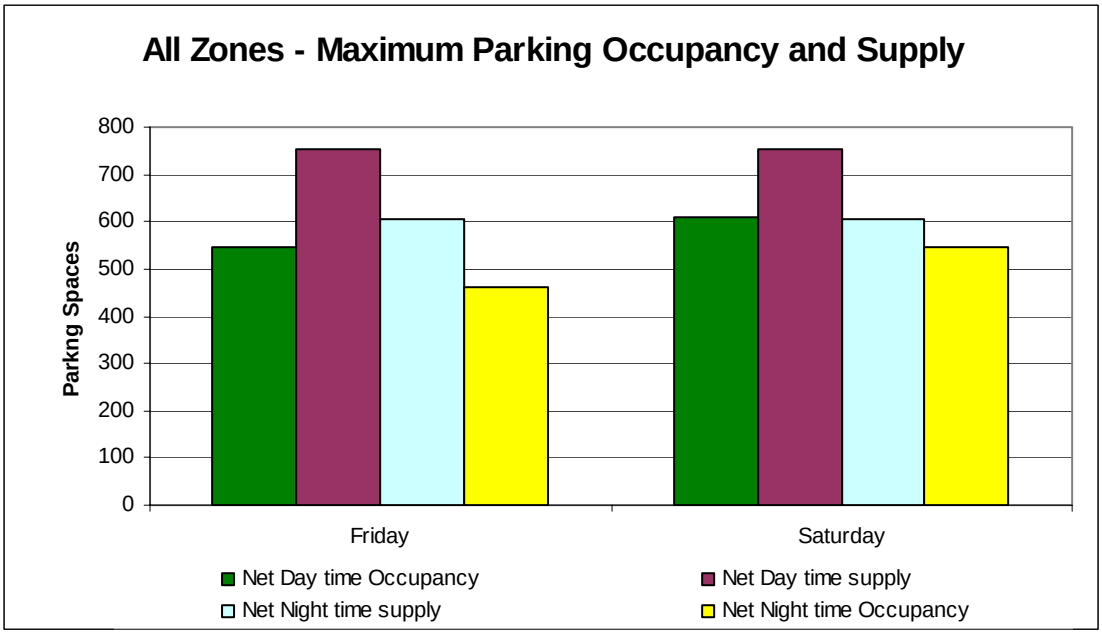
The parking demand surveys were carried out in September 2005. During this period, schools operation was typical and the weather was warm and dry. Therefore, the survey period is considered as "typical". Visitor trips would be expected to increase closer to Christmas as retail and recreation/leisure activities increase in early December, while schools and the workforce are also still operating. A seasonal factor can be applied to the measured parking demand to estimate the demand in such short peaks. However, this parking review is based on a "typical" day parking demand as it is impractical to design the parking system to cater for such short peak demands.

The measured "typical" parking demand for the Balmain Business District is 1,101 spaces (77% of supply) on Friday and 1,280 spaces (89% of supply) on Saturday. These current demands however contain permit holders' parking demand, which has been measured at around 55% of on-street parking during daytime, and 59% and 62% at night time (Friday and Saturday respectively).

A peak demand over 90% is considered "very high", as this high level of parking occupancy means that there is little parking capacity. This parking situation is also interpreted as "critical state" where it causes greater inconvenience to motorists seeking parking as well as generating unnecessary traffic circulation. This situation is aggravated at night time as the efficiency of parking utilisation decreases (limited visibility affects vehicle reversing and turning manoeuvres).

However, the off-street parking in the Balmain Business Centre is currently experiencing very high (>95%) levels of occupancy from 9am onwards. The occupancy levels in both on- and off-street parking reach 93% and 100% respectively at night time on Saturdays in Zone 1 (around Darling Street (between Jacques Street and Jane Street)). This demand would be expected to last past 10pm at which time that the surveys ceased. This situation clearly indicates the maximum utilisation of parking in the area.

Figure 5.1 Overall Parking Occupancy and Supply



The net parking occupancy and existing net supply for the Balmain Business Centre as a whole is shown in the above figure. This does not show the differences between the zones in the centre.

It should be noted that the values in the above figure have been adjusted to exclude the estimated permit holders' share of occupancy. While overall in the business centre there is still available supply of parking on Fridays, this is critical on Saturdays, especially at night time.

5.3 Statutory Compliance

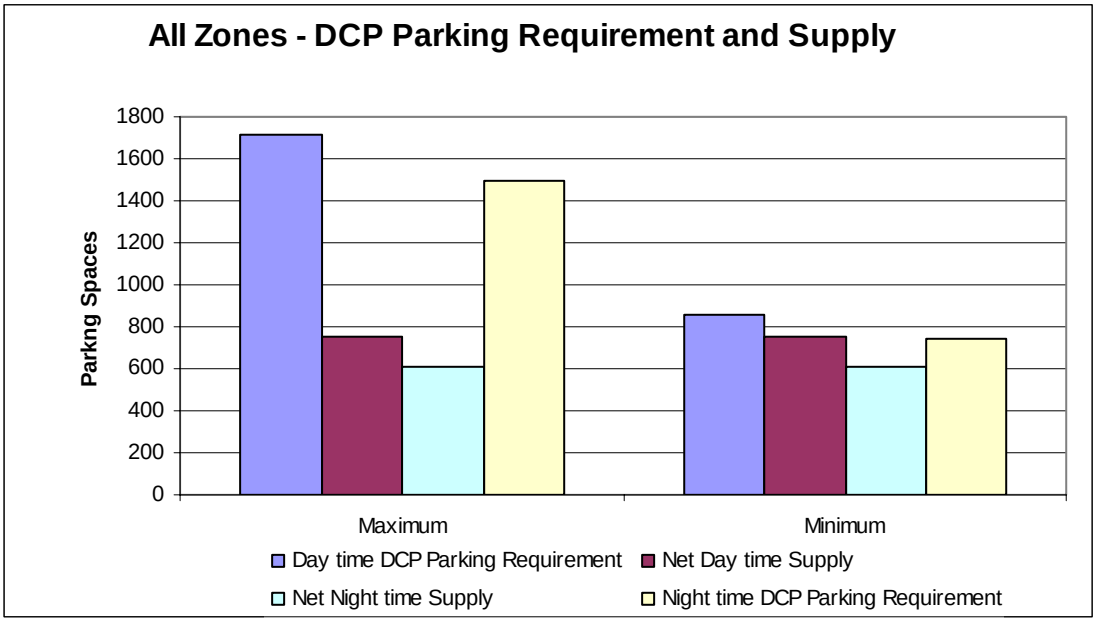
The parking supply was assessed against the statutory parking requirements according to parking rates provided in the Leichhardt DCP. The parking requirements were generated separately for the day time and night time and calculated as 1,713 spaces for day time operating land uses and 1,494 spaces for night time operating land use.

The *net daytime* parking supply of 752, which is considered as available during normal business hours, does not comply with the maximum statutory requirements, and gives a deficiency of 961 spaces. The supply value has been adjusted to exclude any parking occupied by residents and permit holders.

The *net night time* parking supply of 605 spaces, which is the night time parking availability, does not comply with the maximum statutory parking requirement of the existing land uses, and is deficient by 889 parking spaces. The supply value has been adjusted to exclude any parking occupied by residents and permit holders.

The Balmain Business Centre does not comply with the minimum statutory parking requirement, with an under-supply of 104 spaces during the day time and 142 spaces in the night time, as shown in Figure 5.2.

Figure 5.2 Leichhardt DCP Parking Requirement compared to Supply



The parking rates provided by the Roads and Traffic Authority were not used as they are more general and less up-to-date than Council's DCP which is more land use specific.

5.4 Modal Split of Visitor/Shoppers and Workers Trips

As discussed in Section 3.3 above, among the shoppers/visitors to centre, 60% of shoppers access the business centre by car, while 28% walked and 10% used public transport. More workers depend on car access (73%) and similar number used public transport (11%).

In terms of utilisation of parking in the area, 43% of visitors/shoppers utilised the off-street parking while the 58% utilised the on-street parking. The split of off-street and on-street parking utilisation for workers was 79%-25%.

The modal split also indicated that 50% of the shoppers/visitors to the area were from Balmain and 26% of workers originated from Leichhardt.

The majority of shoppers/visitors (86%) spent 2 hours or less in the centre while 81% of workers stayed 6 or more hours.

5.5 Public Transport and Taxis

The modes of public transport available for visitors/shoppers to the centre are buses and taxis. The nearest railway station is located in Petersham and the closest light rail station is at Lilyfield. The ferries are linked to the CBD and are not within walking distance of the centre.

The bus routes along Victoria Road service a large area of metropolitan Sydney, however few of these link directly to Balmain. Travellers must therefore change buses at Rozelle, and most visitors would be unlikely to do this on a regular basis.

As in the other centres, there are currently few taxi ranks provided in the Balmain Business Centre (the main area being at the old Balmain Town Hall). In the evening, taxi rank distribution throughout the centre would service the café / restaurant patrons more effectively, as well as greater taxi frequency.

5.6 Conclusions

5.6.1 Mode Split

Balmain appears to have more shoppers/visitors using the car (in the daytime when interview surveys were undertaken) than the other two centres, and this could be related to its poorer accessibility by public transport. In summary, the user modal split indicates that:

- Among shoppers/visitors, 28% walked and 60% depended on car transport to the business centre;
- Among workers, 16% walked and 73% depended on car transport to the business centre.

5.6.2 Parking Supply and Demand

The *net daytime* and *net night time* parking supplies for the Balmain Business Centre are 752 and 605 respectively. The statutory maximum parking requirements for current land uses are 1,713 during the daytime and 1,494 at night time. Therefore, the parking supply has a deficiency of 961 spaces during the daytime and 889 spaces at night time.

The statutory minimum parking requirements for current land uses are 856 during the daytime and 747 at night time. This still leaves a parking supply deficiency of 104 spaces during the daytime and 142 spaces at night time.

Throughout the day and night, parking demand consists of both visitors and residents/permit holders, causing high demands on both on-street and off-street parking supplies.

Existing parking supply and level of parking usage indicate that:

- Parking demand data are obtained on a "typical" day and ±10% gives any seasonal high/low;
- The peak level of occupancy occurs from 9pm on Saturday and during normal business hours on Friday;
- The peak level of occupancy on-street (88%) and off-street (100%) has reached "critical" levels in Darling Street, between Jane Street and Jacques Street on Saturday;

- The parking along the section of Darling Street, between Jacques and Young Streets, provides 24% of all on-street parking stock in the area, however, the occupancy levels are lowest in the centre (76% at night time). This area constitutes the 'bank' of parking which would overflow from the busiest zone in the centre.
- The permit holders (residents and business property occupiers) occupy around 55% of on-street parking supply during the daytime, and are estimated to occupy approximately 831 spaces (62%) of on-street parking supply on Saturday night;
- The supply of parking (on-street and off-street) for visitors at daytime is therefore about 752 spaces, while at night time is about 605 spaces;
- An additional 104 spaces during the daytime and 142 spaces during the night time will be required (above the current supply of 752 and 605 spaces respectively) to meet the minimum DCP requirement at this stage for the whole study area;
- If only the off-street spaces are considered (existing is 95 spaces), then the centre has a shortfall of 761 spaces during the daytime and 652 spaces at night time according to the minimum DCP requirement (which is calculated at 856 and 747 spaces respectively).

Presently Balmain Business Centre relies on on-street parking to service its non residential land use parking needs. Contemporary parking policy specifies that all parking should be off-street. Clearly it will be very difficult for existing uses to comply with this given that the off-street parking is only 7% of total parking stock in the study area.

Table 5.1 is a summary of the existing parking environment examined in this report; the highlighted components present a deficiency which needs addressing.

Table 5.1 Synthesis of Parking Demand, Statutory Requirements, Permit Parking in Balmain

Peak Parking Demand (based on Tables 2.3 &2.4)			
Day	Location	Where / When	Parking Demand as % of Gross Supply
Friday	Balmain Business Centre	All – at 11am & 1pm	77%
	Greatest Demand Zone	Zone 2 – 11am	100%
	Greatest Demand Zone	Zone 1 –1pm	81%
Saturday	Balmain Business Centre	All – at 9pm	89%
	Greatest Demand Zone	Zone 1 – 9pm & 1pm	94% 89%
	Greatest Demand Zone	Zone 2 – 9pm	87%
Statutory Parking Space requirements and Existing Net Supply (based on Table 4.3)			
Existing Gross Parking Supply		1436	
DCP	Minimum Parking Requirement	Net Supply	Net Supply / Deficiency
Daytime - all Centre	856	752	-104
Zone 1a	246	243	-3
Zone 1b	378	331	-47
Zone 2	38	35	-3
Zone 3	194	143	-51
Night time - all Centre	747	605	-142
Zone 1a	243	183	-60
Zone 1b	337	271	-66
Zone 3	140	121	-19
Net (Visitor) Parking Supply and Net (Visitor) Occupancy (based on Figure 5.1)			
	Net Parking Supply	Net Occupancy	
Friday			
Daytime	752	73%	
Night time	605	77%	
Saturday			
Daytime	1843	81%	
Night time	1676	90%	

Table 5.1 summarises the peak parking demand and when it occurs. The demand includes resident and business parking. On Saturday, the Balmain Centre as a whole has reached critical parking level at 9pm (89%) with the greatest critical demand in Zone 1 at 9pm (94%) and also at 1pm (89%). Demand is not as great on Friday in the centre as a whole (77%), although Zone at 11am was at 100% occupancy.

If the DCP minimum parking rate is applied to the land uses in the Centre, the Balmain Centre as a whole is in deficit for both the daytime (-104) and night time period (-142), however significant deficiencies exist in Zone 1b for both daytime and night time uses. The deficiency is greatest in Zone 1 bounded by Jacques and Curtis Streets.

Finally, examining the existing demand within the context of the net component – that is, the actual parking available to visitors and the degree of take up of the parking by visitors, then the existing situation in Balmain Centre is at critical levels (90%) for the night time period on Saturday. During the daytime period on Saturday, the occupancy is also high at 81%. Friday exhibits acceptable levels.

In order to increase parking for the Saturday night time period so that 80% occupancy is achieved, at least 85 parking spaces are required. To comply with the DCP minimum requirements for the night time period, 142 spaces are required.

5.6.3 Overall Parking Management

The principal recommendation in relation to parking supply for the Balmain Business Centre is that in order to service the existing Saturday night time parking, a minimum of 85 parking spaces are required for that time. However to comply with the DCP minimum requirements for the night time period, a further 57 spaces are required to bring the total up to 142 spaces in total.

Council should provide 85 spaces of off street parking as soon as possible. The additional 57 spaces can be provided as a second stage and could be included in a large redevelopment as additional space above the requirements of the development site's requirements The location of this parking should be no further than about 300m from Woolworths which is the central point of the core area (Zone 1) of Balmain.

However, to maximise the utilisation of the current parking stock, particularly on-street, it is important to:

Increase the availability of public parking (on-street and off-street) for visitors/shoppers to the LGA by:

- Limiting the number of parking permits issued to residents and business property occupiers/owners to be more in line with other inner city LGAs;
- Introducing a "cap" for the permits issued for properties between Jane and Jacques Streets;
- Relocating "permit holders excepted" parking outside the Balmain Business Centre;
- Modifying the parking regulations to prevent permit holders utilising on-street parking in Darling Street, between Jane and Jacques Streets; and
- Increasing awareness of availability of parking and taxi ranks to visitors (use of parking maps, transport access guide by restaurants) to the centre.

Improve public transport facilities within the LGA by:

- Increasing capacity of Taxi Ranks in Darling Street particularly in the area from Jane and Jacques Streets;
- Investigating the introduction of 'shopper' bus routes servicing the centre from other parts of the LGA, and
- Investigating the Night Bus services to this area;

Ensure future land-uses, including developments that increase evening trips and residential developments, accommodate additional parking generated within their premises. This can be done by:

- Future Development Applications for retail, commercial or residential premises, particularly in Zone 1, including a provision of off-street parking as a condition of consent;
- Council refusing to accept monetary contributions in-lieu of off-street parking provisions; and
- Resident and Business permits no longer being granted to new residents and businesses.

Implement measures to accommodate potential car ownership growth by:

- Resolving whether priority is to be given to visitor parking or resident parking in terms of utilising the available on-street parking;
- Provision of off street parking for visitors and local residents.

5.6.4 On-street Parking Management

The main day time surveyed trip purposes include shopping, recreation (visiting cafes & meeting friends) and would normally require a minimum 3 hour time period. The short trips (2hr trips) are likely to cover banking and some services such as real estate, a short hotel visit, a shopping trip that excludes a visit to a café (but excluding services such as hairdressing, accountant).

GTA's interview surveys, carried out during the day in Balmain, indicate that about 86% of visitors stayed 2 hours or less, while 14% stayed 3 hours or more. The sample was too small to distinguish between those who used cars and those who used other modes.

It is therefore recommended that the peak demand areas – ie Zone 1 (Darling Street between Jacques Stephen Street), be provided with the following mixture of parking time zones:

- 1P (48%),
- 2P (38%) and
- 3P (14%).

Additionally, no 4P parking is provided during the day time on street, as this would be taken up in the first instance by local employees. The demand for 4P during the day time should be accommodated in off-street car parking areas only.

At night time all on-street parking could be reverted to 4P which is more suitable for recreation uses.

5.6.5 Off Street Parking Supply

This centre has the greatest need to increase off-street supply of parking to service existing land uses. According to Council's own DCP requirements, and taking existing on street and off street parking supply into consideration, the centre falls short by about 104 parking spaces during the daytime, and 142 parking spaces at night time. It is therefore recommended that Council investigates the feasibility of acquiring and redeveloping a site to accommodate at least 142 off-street parking spaces within the centre. While the site thus redeveloped can accommodate mixed use, it should result in a net increase of up to 142 off-street car spaces to service existing land uses.

There is no clear location where off street parking can be established, except perhaps around the old Balmain Town Hall. While the Woolworths car park is centrally located within the peak demand zone, this is privately owned and negotiations would be required for any expansions to this car park.

As discussed above, the expansion of parking should however be undertaken in concert with an overall land use / parking strategy for this centre. This strategy could consider the containment of any further expansion of Centre land uses which may also attract significant numbers of visitors in cars.

Appendix A Parking Supply & Demand - Data Sheets

Appendix B Questionnaire Surveys

Appendix C Land Use Survey Plans & Data Sheets