

# MACQUARIE PARK PARKING RATES STUDY

FOR  
CITY OF RYDE



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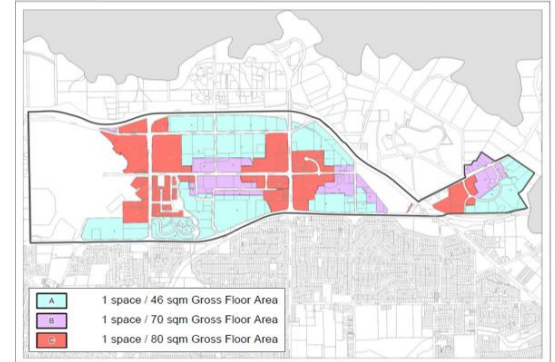
## EXECUTIVE SUMMARY

The Macquarie Park precinct has experienced significant growth in recent years and is expected to continue its redevelopment and diversification with forecasts of it doubling its number of employees by 2031. Congestion levels in the study area have increased significantly in recent years. As the precinct continues to grow and redevelop, it will naturally transition to include a greater proportion of conventional, CBD-style office space. As part of this transformation, transport usage will need to move away from predominantly private vehicle access to both support the centre's transformation into a more diverse commercial precinct and to simply facilitate the centre having sustainable levels of accessibility so that it can remain competitive for attracting investment. Parking provision will play a decisive role in this transformation as a key factor that can influence the transport mode share.

Three commercial/industrial parking rates are currently applicable, as follows:

- 1 space / 46m<sup>2</sup> Gross Floor Area, FSR of 1:1 in Area A;
- 1 space / 70m<sup>2</sup> Gross Floor Area, FSR 1.5:1 in Area B; and
- 1 space / 80m<sup>2</sup> Gross Floor Area, FSR 2:1 and 3:1, in Area C (within 400m of a rail station).

Residential parking rates have been excluded from this study. The residential parking rates currently applicable in the precinct are outlined in the recently approved DCP.



In general, the parking rates and parking characteristics in Macquarie Park sit somewhere between a car-dominated business park and a traditional non-CBD business centre with office towers (i.e. like Chatswood and Green Square). However, the scale of employment and traffic in Macquarie Park far exceeds other “secondary” centres in Sydney and any parking supply policy change will therefore have a significant effect on future traffic congestion levels.

Stakeholder feedback is mixed but there is a general consensus that whilst parking supply is an important commercial feature, there is some “room to move” in reducing rates in the 1/46m<sup>2</sup> GFA area (i.e. Macquarie Park Area A) before parking limitations actually affect the competitiveness of leasing space and further investment in the area.

The key issue for changing parking rates in Macquarie Park appears to be the rate of transition over time related to how quickly public transport services can be added to provide a practical alternative, and how quickly land use change can occur in Macquarie Park office space product type and in employees moving closer (on average) to Macquarie Park. Parking supply rate changes should be seen as one factor, albeit an important factor in encouraging land use and public transport changes but managed carefully as Macquarie Park transforms to a slightly different product mix.

The Business as Usual (BAU) case is estimated to result in an increase of total parking supply of approximately 10,000 spaces by 2031 to accompany the increase in GFA. As a result, the current private vehicle mode share (75%) would experience a negligible reduction (to 74%) which is insufficient to generate improvements to the current and future road network performance issues and would likely worsen current congestion levels.

The two private vehicle mode share targets investigated produced a reduced total parking supply when compared to the BAU case. With an increase in GFA of approximately 1,070,000m<sup>2</sup> and redevelopment of 50% of the existing floor space, the results indicate that:

- Achieving a 70% mode share target by 2031 would require the total increase in parking supply to be limited to approximately 3,000 to 4,000 spaces. This represents a parking space growth of 1 space per 355m<sup>2</sup> of new or redeveloped floor space, approximately; and
- Achieving a 60% mode share target by 2031 would require a total decrease in current parking supply in the order of 9,000 spaces. This means that sites that are re-developed would have their parking reduced substantially and new developments/infill would have far more restrictive parking rates.

An evaluation framework was formulated to appraise and compare various parking provision scenarios. The evaluation was based on five main criteria, as follows:

- Progress to reach the preferred mode share target of 60% by private vehicle;
- Alignment with planned building densities and areas of existing and potential PT accessibility;
- Impacts on commercial viability of continued development and competitiveness with other centres;
- Staging and implementation of parking rate changes (e.g. in line with PT upgrades); and
- Differential impacts of using significantly different rates in adjacent precincts within Macquarie Park.

Following the scenario evaluation and feedback received from Council, it was determined that the 60% private vehicle mode share scenarios involved measures considered to be too aggressive and that this could eventually affect the precinct's competitiveness and viability.

The 70% private vehicle mode share target scenarios produced a more reasonable change in total supply, allowing overall parking supply to grow as floor space grows to 2031, while doing so at a much lower rate.

Three scenarios were evaluated to help achieve the 70% private vehicle mode share target by 2031 ("Even reduction of parking rates throughout the precinct", "Bias around stations" and "Two Zones Only"). The outcome of the evaluation process and consultation with Council was that the preferred scenario was the "Two Zones Only – 70% Private Vehicle Mode Share". This scenario consists of a parking rate of **1/60m<sup>2</sup>** for commercial and industrial floor space on the outer areas and **1/100m<sup>2</sup>** in the core (closer to the train stations).



The key reasons to select this scenario are as follows:

- It allows a certain differentiation between areas with better public transport provision (namely those in close proximity to the rail station);
- The differentiation introduced is not as aggressive as "Bias Around Stations" scenario, which would have the higher rate approximately four times higher than the lower rate, therefore having the potential to discourage development in the core areas and/or introduce differential impacts for sites in close proximity to one another;
- Spatially, it is aligned with Council's "Floor Height Map" for Macquarie Park which would simplify the implementation and improve consistency for different planning instruments; and
- The proposed scheme does not include any sectors with rates above 1/100 (i.e. the changes are not as pronounced when compared with other scenarios which include sections with rates of 1/150 or 1/200);

While the mode share estimations and scenarios evaluation were based on introducing the new rates now and maintaining them until 2031, the proposed strategy would benefit from having a transition / staging program to assist in gradually delivering the modified parking rates. It is also logical to combine the full implementation of the revised parking rates with improvements to the public transport service in the area, so that workers who decide to make the transition from private vehicle have an adequate alternative in public transport. This will help in gaining support from the community and stakeholders.

The implementation of the North West Rail Link (with completion estimated by early 2019) will constitute a significant improvement to public transport service in the area. Not only will it directly connect Macquarie Park with residential catchments to the west of Epping, but it will also increase train frequency in the Epping to Chatswood Rail Link (claimed to be converted to "one train every four minutes during the peak periods"). This upgrade is a logical trigger after which the modified parking rates could be made fully operational. Until then, a transition period could be applied in which the new rates would only apply to "new development". Any re-development would be allowed to maintain current parking supply (that is, where the new rates would result in a reduction of parking spaces, this would be waived so that current supply could be kept).

A staged implementation also allows other initiatives to be planned and delivered such as bus service improvements and walking / cycling facilities, which would assist achieving a successful balance of different mode shares while overall parking provision is reduced (in proportion to the overall floor area).



## 1. INTRODUCTION

### 1.1 BACKGROUND

Bitzios Consulting has been engaged by the City of Ryde to undertake a parking study for the Macquarie Park Precinct. Macquarie Park is a growing business precinct, recently outperforming all Sydney non-CBD centres in terms of its growth. Macquarie Park has diversified from its original technology and research focus into more of a general office and “corporate headquarters” area. The precinct includes Macquarie University (with approximately 40,000 enrolments) and Macquarie Centre (with approximately 140,000 sqm GFA). It is forecast to increase by approximately 1,000,000 sqm of office floor space over the next 20 years. The study area is shown in Figure 1.1.



**Figure 1.1: Study Area**

The main road corridors servicing the study area consist of the M2 Motorway, Epping Road, Delhi Road and Lane Cove Road.

Relatively high parking rates for new commercial development have been in place in Macquarie Park (compared to other employment centres within 20 km of the Sydney CBD) and parking availability has historically been a catalyst for attracting new development into the area and for attracting tenants to existing developments. Its plentiful parking, strategic location related to the roads system has fuelled its evolution into a “business park” with corporate “head offices” of many large companies taking up sites with typically low storey, large floor plate buildings.

Based on a report prepared by ARUP in 2009, the precinct currently contains approximately one car space per employee, the total supply within the precinct consists of:

- 31,500 off-street car parking spaces;
- 1,000 on-street car parking spaces in the precinct;
- 1,300 on-street car parking spaces around Macquarie University; and
- 5,200 off-street car parking spaces within Macquarie University.

This level of parking supply is one of a number of factors which encourages workers to drive to and from the precinct.

The precinct has experienced significant growth in recent years and is expected to continue its redevelopment and diversification with forecasts of it doubling its number of employees by 2031. In addition, the State Government identified “North Ryde Station” and “Herring Road” as two Priority Precincts (formerly Urban Activation Precincts) with significant housing growth anticipated for both areas.

Congestion levels in the study area have increased significantly in recent years. As the Macquarie Park Precinct continues to grow and redevelop, it will naturally transition to include a greater proportion of conventional, CBD-style office space. As part of this transformation, transport usage will need to move away from predominantly private vehicle access to both support the centre’s transformation into a more diverse commercial precinct and to simply facilitate the centre having sustainable levels of accessibility so that it can remain competitive for attracting investment. A higher proportion of public transport and active transport trips are important objectives to ensure that



this occurs. Careful management of parking supply will play an important role over time as this transition takes place.

## 1.2 SCOPE

The study was divided into three stages, with key tasks as outlined below:

### ***Stage 1 – Research Phase***

- evaluate current operations, current parking rates, parking demand sources and other relevant factors;
- undertake consultation with key stakeholders to understand current needs and future challenges;
- undertake a comparison of parking supply with similar centres; and
- summarise existing parking issues.

### ***Stage 2 – Parking Strategy Development***

- estimate future year parking demands and evaluate the consequences of a “business as usual” scenario;
- develop options/scenarios to address future year travel demands and achieve desired modal shift targets;
- evaluate the viability of each scenario and the economic impacts versus the benefits of each scenario; and
- formulate an integrated parking strategy for the precinct, defining future parking rates and associated policy changes needed.

### ***Stage 3 – Action Plan and Reporting***

- develop a transition plan and associated time frames to implement the parking strategy;
- prepare an action plan identifying required changes to the DCP / planning tools and other plans/strategies;
- undertake consultation with key stakeholders and seek feedback on the proposed changes; and
- prepare a report documenting the study methodology, key findings and recommendations.

It should be noted that the residential parking rate is excluded from this study.

## 2. PREVIOUS PARKING STUDY

ARUP completed the *Macquarie Park Corridor Parking Study* in November 2009. This was accompanied by a commercial market analysis by Jones Lang LaSalle.

The key findings from that study were:

- *the parking supply in Macquarie Park is “generous” with 31,500 car parking spaces for 32,000 employees. The majority of off-street supply is on private land. In addition, Macquarie University has 5,000 off-street and 1,300 on-street spaces;*
- *historically, the area has attracted businesses with a high level of car dependency. Major road access is very congested. The interrelation between parking and congestion is complex;*
- *in 2009, a large number of developments were in the pipeline and would continue to impose inertia on the change in parking supply rates. The private ownership of most off-street parking in the area also has a similar effect;*
- *in terms of the rental market, Macquarie Park offers lower rents, but an essentially different product from the CBD and North Sydney centres. Its competing centres are considered to be the Sydney CBD Fringe, Parramatta, Homebush Bay/Rhodes and Norwest, with Sydney CBD Fringe Centres the most closely aligned in product; and*
- *Macquarie Park in 2008 was an immature business centre, with developing public transport links (particularly rail) and lower employment densities than other major business centres. Businesses were generally Research and Development-focussed, including pharmaceuticals. Recent planning changes had allowed these business types to diversify somewhat, leading to the possibility of travel behaviour changes.*

ARUP's key recommendations included a combination of “hard” (physical infrastructure) and “soft” (user behaviour and policy) changes across the short, medium and long terms. These recommendations are shown in Table 2.1.

**Table 2.1: Key Recommendations of the ARUP 2009 Report**

<b>Short Term Recommendations</b>	<b>Medium Term Recommendations</b>	<b>Long Term Recommendations</b>
<ul style="list-style-type: none"> <li>▪ <i>Maintain current LEP car parking provision rates and parking pricing;</i></li> <li>▪ <i>Improve wayfinding for pedestrians and safe walking routes;</i></li> <li>▪ <i>Promote Car Sharing and educate towards reduced car travel; and</i></li> <li>▪ <i>Develop transitional car parking spaces to be converted to other uses later.</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Promote multi-modal travel, improve access to rail stations;</i></li> <li>▪ <i>Promote carpooling through reduced parking prices for multiple occupant vehicles;</i></li> <li>▪ <i>Further extend resident car parking schemes;</i></li> <li>▪ <i>Further implement Business and Institutional Workplace Travel Plans.</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>A further review of commercial off-street parking rates (i.e. <b>this study</b>);</i></li> <li>▪ <i>Implement the Metro Wide Parking Policy by NSW Government;</i></li> <li>▪ <i>Develop Pedestrian-Focussed Employment Centre Precincts;</i></li> <li>▪ <i>Assess potential for development funded Section 94 Car Parking Plan;</i></li> <li>▪ <i>Provide peripheral car parking and Park &amp; Ride Strategy for employees and visitors.</i></li> </ul>

### 3. EXISTING SITUATION AND ISSUES

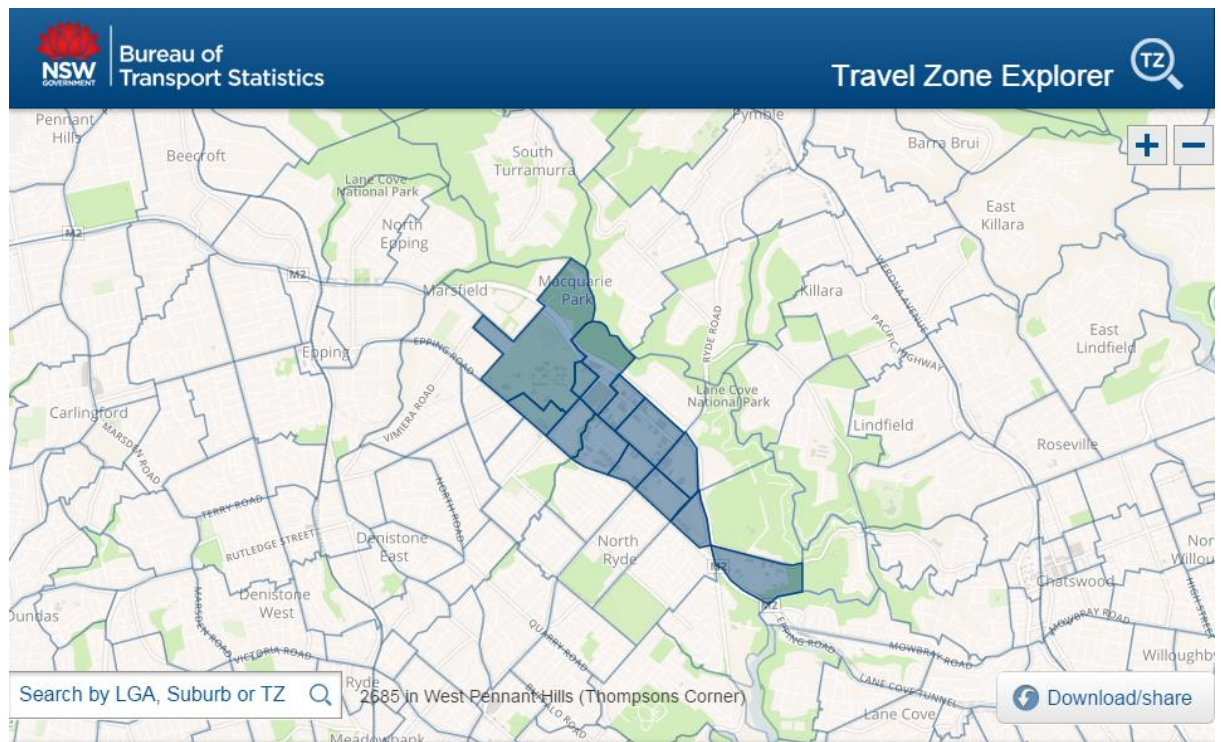
#### 3.1 EMPLOYMENT IN MACQUARIE PARK

The 2011 Australian Bureau of Statistics (ABS) Census records employment but typically does not publish it at a disaggregate level. The *Bureau of Transport Statistics (BTS) Employment Forecast* uses the ABS Census data to extrapolate job numbers to the BTS travel zone framework. The most recent forecast (released in September 2014) estimated approximately 56,000 jobs in the precinct at 2014. This consists of an interpolation between the measured ABS 2011 Census value of circa 53,000 and the projected 2016 value of circa 57,000. City of Ryde estimates that employment may rise to 80,000 by 2031.

Another indication of the employment levels in the precinct comes from the 2011 *BTS Journey To Work* data which indicates the total trips into the precinct to be in the order of 43,000 per day.

#### 3.2 RESIDENT NUMBERS

The number of residents is small compared to the number of jobs in the area. Using the *BTS Travel Zone Explorer*, the existing population in the precinct is estimated to be in the order of 3,000 residents with a resident workforce of approximately 1,100. The precinct travel zones are shown in Figure 3.1.



Source: *BTS Journey to work Visualisation*: <http://visual.bts.nsw.gov.au/tz/>

**Figure 3.1: Precinct Travel Zones Used to Calculate Resident Population**

However, it is important to note that the travel zones immediately to the south and west contain (approximately) an additional 10,000 residents.

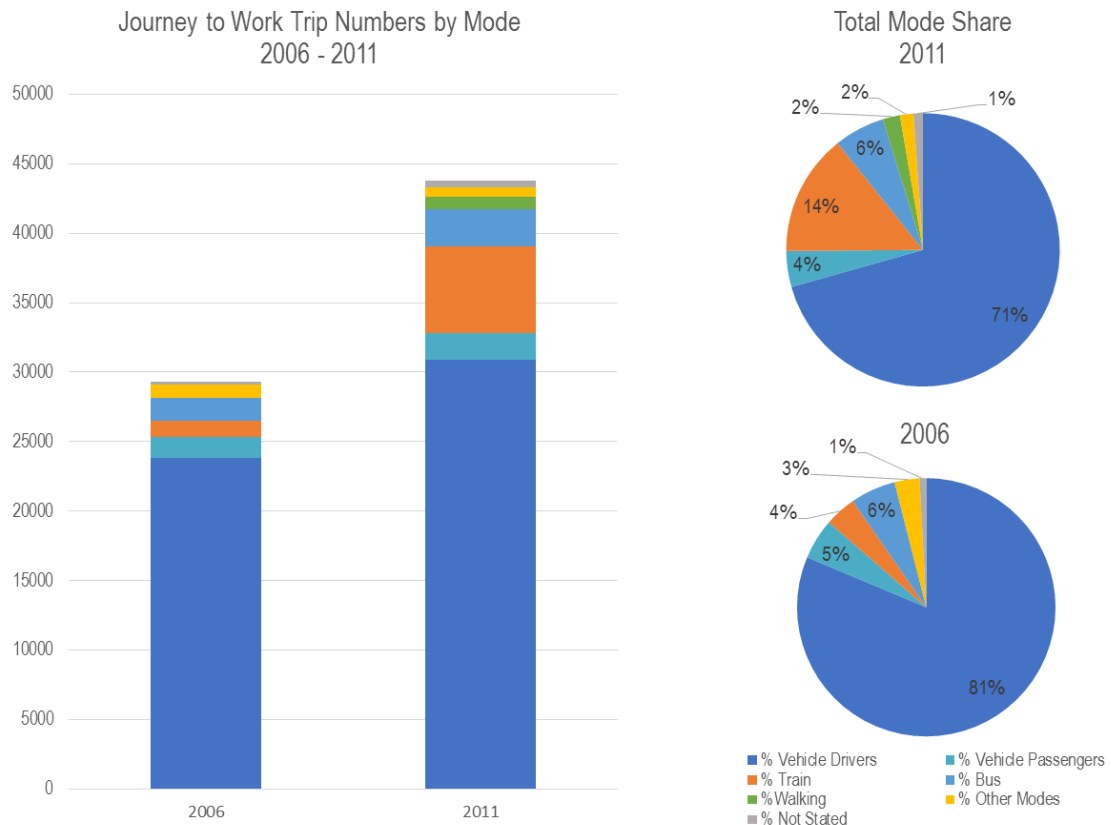
City of Ryde estimates that the number of residents will increase substantially by 2031. The Herring Road Urban Activation Precinct and various other zoning changes and developments will contribute to this increase. The parking provision rates for residential developments is not assessed in this study.



### 3.3 MODE SHARE & TRIP DISTRIBUTION

#### 3.3.1 Overview of Journey to Work Data

The BTS provides estimated trip numbers per travel zone based on the five-yearly ABS Census Data. The 2011 and 2006 BTS Journey to Work Surveys were used with their corresponding geospatial systems to identify origin and destination for trips to and from the study area, as well as the modal splits. A comparison for these two years is provided in Figure 3.2 with a more detailed analysis shown in Table 3.1.



**Figure 3.2: Comparison of Journey to Work trips and mode share (BTS, 2006 & 2011)**

**Table 3.1: Summary of JTW 2006 and 2011 Data**

Year	TOTAL Trips	Vehicle Drivers		V. Passengers		Train		Bus		Walking		Other		Not Stated	
		Trips	Mode %	Trips	Mode %	Trips	Mode %	Trips	Mode %	Trips	Mode %	Trips	Mode %	Trips	Mode %
2006	29,352	23,846	81%	1,497	5%	1,157	4%	1,663	6%	Counted as 'Other'		914	3%	246	1%
2011	43,799	30,917	71%	1,861	4%	6,303	14%	2,625	6%	890	2%	699	2%	489	1%
Difference	14,447	7,071	30%	364	24%	5,146	445%	962	58%	890	-	-215	-1%	243	99%
Modeshare Change			-11%		-1%		10%		0%		2%		-2%		0%

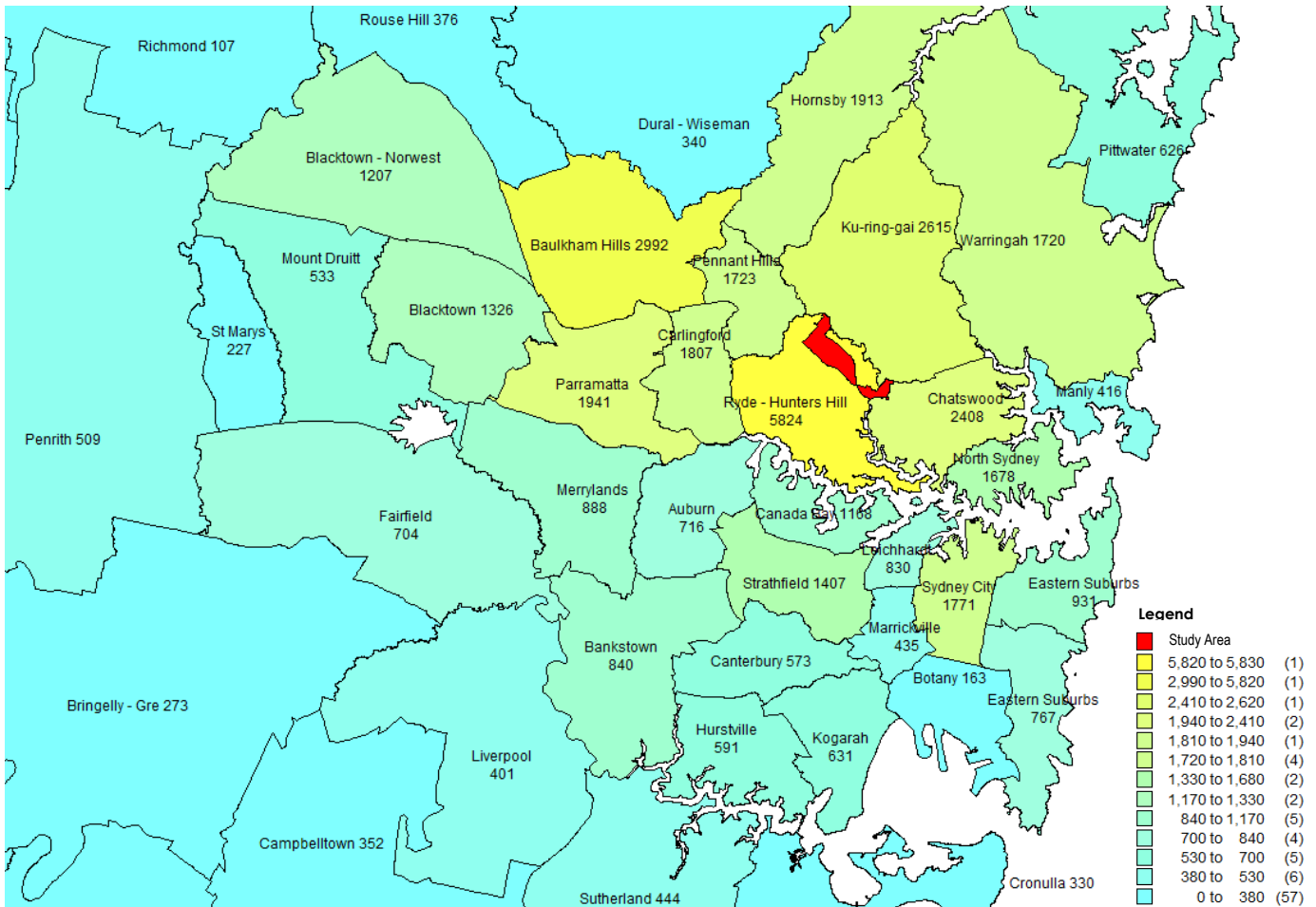
The data indicates that between 2006 and 2011 the total journey to work trips grew by 49% from 29,352 to 43,799, while both passenger and driver vehicle trips grew more slowly than all other travel modes with the most significant increase in public transport usage. It should be noted that these incoming JTW trip numbers also include students, shoppers and other groups. These trips are also likely to continue growing in the future.

This resulted in the mode share changes highlighted in Table 3.1. The Private Vehicle / Non-Private Vehicle split stood at 75% / 25% in 2011 compared to the Year 2031 precinct target of 60% / 40% (Macquarie Park Traffic Study, 2008). The substantial growth in train trips is related to the opening of the "Chatswood to Epping Rail Link" in 2009. However, a significant net growth in car trips was still observed. It was interesting to note that between 2006 and 2011, with the opening of the Chatswood to Epping Rail Link, there appeared to be a shift of 10% more trips from car to train, with all other modal shares remaining relatively constant. This finding underlines some of the challenges facing bus transport in attracting greater modal shares as congestion increases, even if effective parking supply was to reduce.

The recorded vehicle occupancy also remained stagnant at 1.06 persons per vehicle. It should be noted that the trips originating in the study area totalled approximately 800 in 2006 and 1,000 in 2011. These numbers are small compared to the incoming trips and show the focus on employment-based (inbound) Journey to Work Travel. University student travel would have similar patterns to commuter (inbound) travel although would not be as concentrated in the peak periods and for work-based trips.

### 3.3.2 Spatialising the Journey to Work Data

The Journey to Work data identifies the origin and destination of each trip category and can be visualised using GIS software to show the spatial distribution of the trips. Total trip numbers have been aggregated to Statistical Area 3 level (roughly LGA level) and are presented in Figure 3.3.

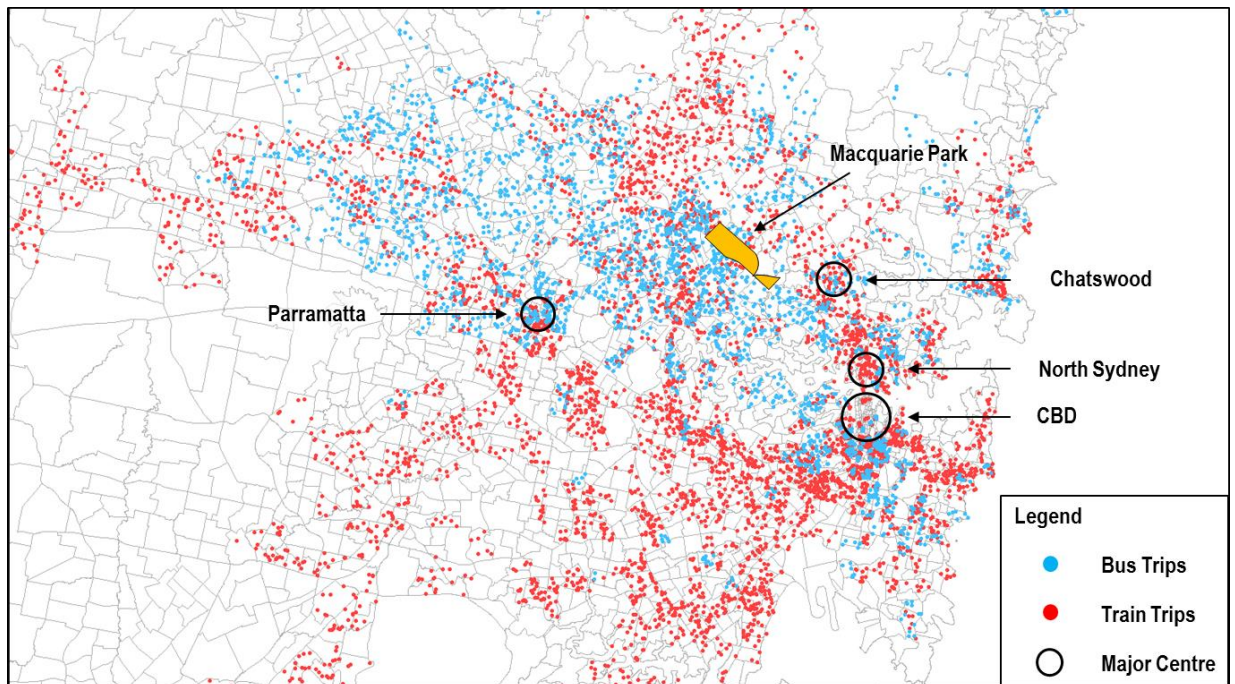


Source: BTS Journey to Work Table 19: Origin TZ x Destination TZ x Mode9 V1.1

**Figure 3.3: Total Incoming Daily Commuter Trips by Statistical Area (SA3)**

Figure 3.3 shows a broad spread of resident locations for employees of Macquarie Park with higher numbers closer to Macquarie Park as expected. It is also evident that the vast majority who work in Macquarie Park reside in Sydney's northern and north-western corridors.

This data was further disaggregated by Public Transport modes (Train and Bus) for a comparison of their different catchment areas. Figure 3.4 provides an overview of these areas using a dot density plot.



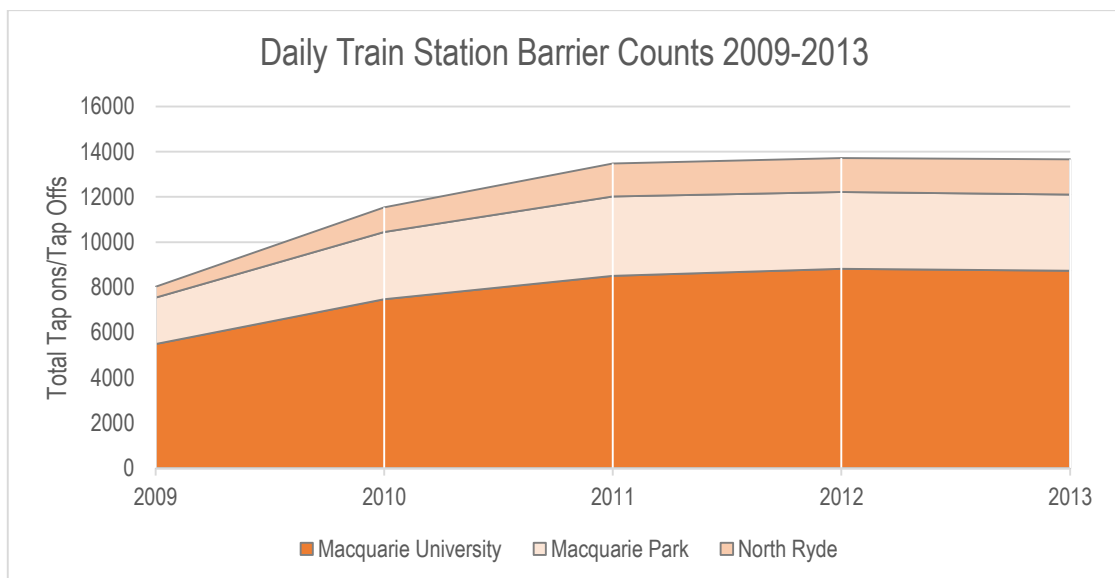
Source: BTS Journey to Work Table 19: Origin TZ x Destination TZ x Mode9 V1.1

**Figure 3.4: Incoming Train and Bus Trip Origin Locations**

The bus trips appear to congregate in areas not serviced by rail and where a direct or “single change” bus service is evident, relatively close to Macquarie Park. Conversely train trips come from farther afield with multiple interchanges required in some cases, and high park and ride/kiss and ride usage near the “home” location is also likely.

### 3.3.3 Train Station Barrier Counts

The opening of the North Ryde, Macquarie Park and Macquarie University Stations in 2009, along with overall trip growth accounts for the large growth in commuter train trips shown in Figure 3.5.



Source: BTS Station Barrier Counts – 2004 - 2013

**Figure 3.5: Daily Train Station Barrier Counts in the area 2009-2013**

The usage “ramp up” phase can be seen from 2009 to 2011. Following this, train demand has remained stagnant to 2013. Changes to the timetables at these stations have been in place since October 2013, but at the time this study was prepared, the 2014 data had not been released to show the effects of timetable changes on patronage. The aggregate nature of the publicly released Station Barrier Counts means the types of users (students, employees etc.) at each station cannot be determined.



Into the future, the incorporation of the Epping-Chatswood Rail Line into the “rapid-transit” North West Rail Link is likely to change train patronage for access to Macquarie Park. It will capture a new north-west catchment with increased frequencies, but may also lose its direct connection to the city and become dependent on the transfer efficiency at Chatswood Station, which may deter some travellers who have a viable “drive and park” choice.

### **3.3.4 Overall Travel Pattern Influences on Parking Needs**

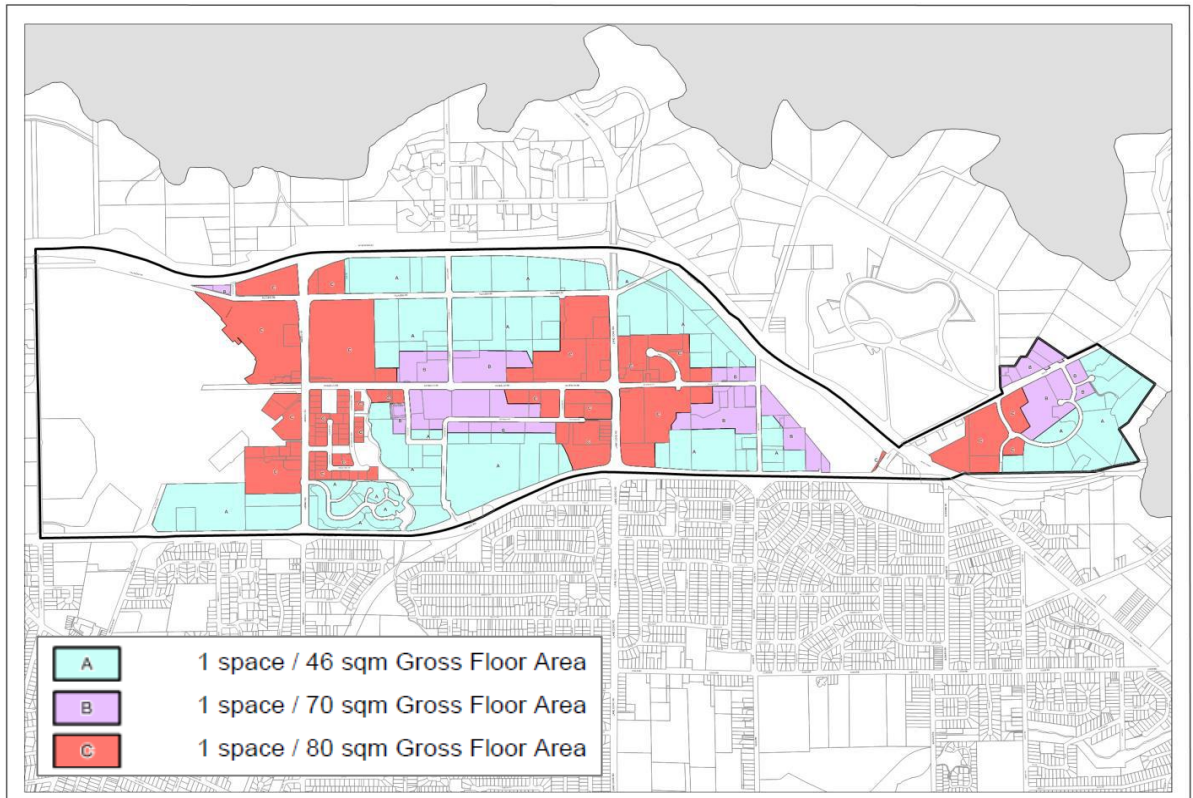
The data suggests that the resident locations of trips to/from Macquarie Park are diverse across Northern and Western Sydney, as well the inner south-west. In the short term and medium term, this will make increasing public transport usage quite challenging. Over many years, congestion and other factors are likely to see a housing shift as Macquarie Park workers move closer towards their workplace where more buses and direct trains exist. If implemented, the mooted light rail from Parramatta may also have some influence on resident location choice when working in Macquarie Park. Improved coverage of direct bus services as the size of the potential patronage market increases within Macquarie Park will also assist in reducing the proportion of Journey to Work trips by car; however these changes take time. The challenge will be to influence this modal shift gradually through incremental parking supply policy that works with the suite of other changes that encourage modal shift (such as bus service changes, bus priority, improved active transport connections etc.). The length of time over which this transition occurs is important, so as to not suddenly affect the competitiveness of Macquarie Park compared to other similar centres.

#### 4. EXISTING PARKING RATES

The Macquarie Park Precinct is covered separately to the City of Ryde DCP office rate via Clause 4.5B (2) of the Ryde LEP 2014. The three applicable commercial and industrial rates include:

- 1 space / 46m<sup>2</sup> Gross Floor Area, FSR of 1:1 in Area A;
- 1 space / 70m<sup>2</sup> Gross Floor Area. FSR 1.5:1 in Area B; and
- 1 space / 80m<sup>2</sup> Gross Floor Area, FSR 2:1 and 3:1, in Area C (within 400m of a rail station).

The applicable areas are defined in the Ryde LEP 2014 as show in Figure 4.1.



Source: Ryde LEP 2014, Macquarie Park Corridor Parking Restrictions Map. 6700\_COM\_MPP\_004\_010\_20140227 to \_009\_010\_20140227.

**Figure 4.1: Macquarie Park Corridor Parking Rates, Ryde LEP 2014**

## 5. COMPARISONS TO OTHER CENTRES

### 5.1 COMPARISON LOCATIONS

A comparison with the parking rates applicable in other commercial centres was conducted to better understand how Macquarie Park is positioned in relation to its competing precincts. The locations included in this comparison were:

- Chatswood;
- Green Square;
- North Sydney;
- Rhodes;
- Norwest;
- Olympic Park; and
- Parramatta.

The main factors considered as part of this comparison are the total floor space, existing mode share (from JTW 2011), with detailed data presented in Appendix B. Qualitative considerations like the overall transport context, business specialisation, area character, zoning and presence of residential areas (and consequent local trips) were also taken into account.

The Jones Lang LaSalle commercial market analysis accompanying the ARUP 2009 Report is still considered relevant for current conditions.

### 5.2 CHATSWOOD

#### 5.2.1 Off-street Parking Maximum

In accordance with the *Willoughby Development Control Plan*, three parking rates for commercial floor space are applicable, as follows:

- 1/60m<sup>2</sup> outside Rail Precincts;
- 1/110m<sup>2</sup> in railway precincts and other major public transport corridors, except below; and
- 1/200m<sup>2</sup> in Chatswood Business Centre (WLEP Zone B3: Commercial Core), where access is only available from Pacific Highway, Albert Ave, Victoria Avenue, Help or Railway Streets.

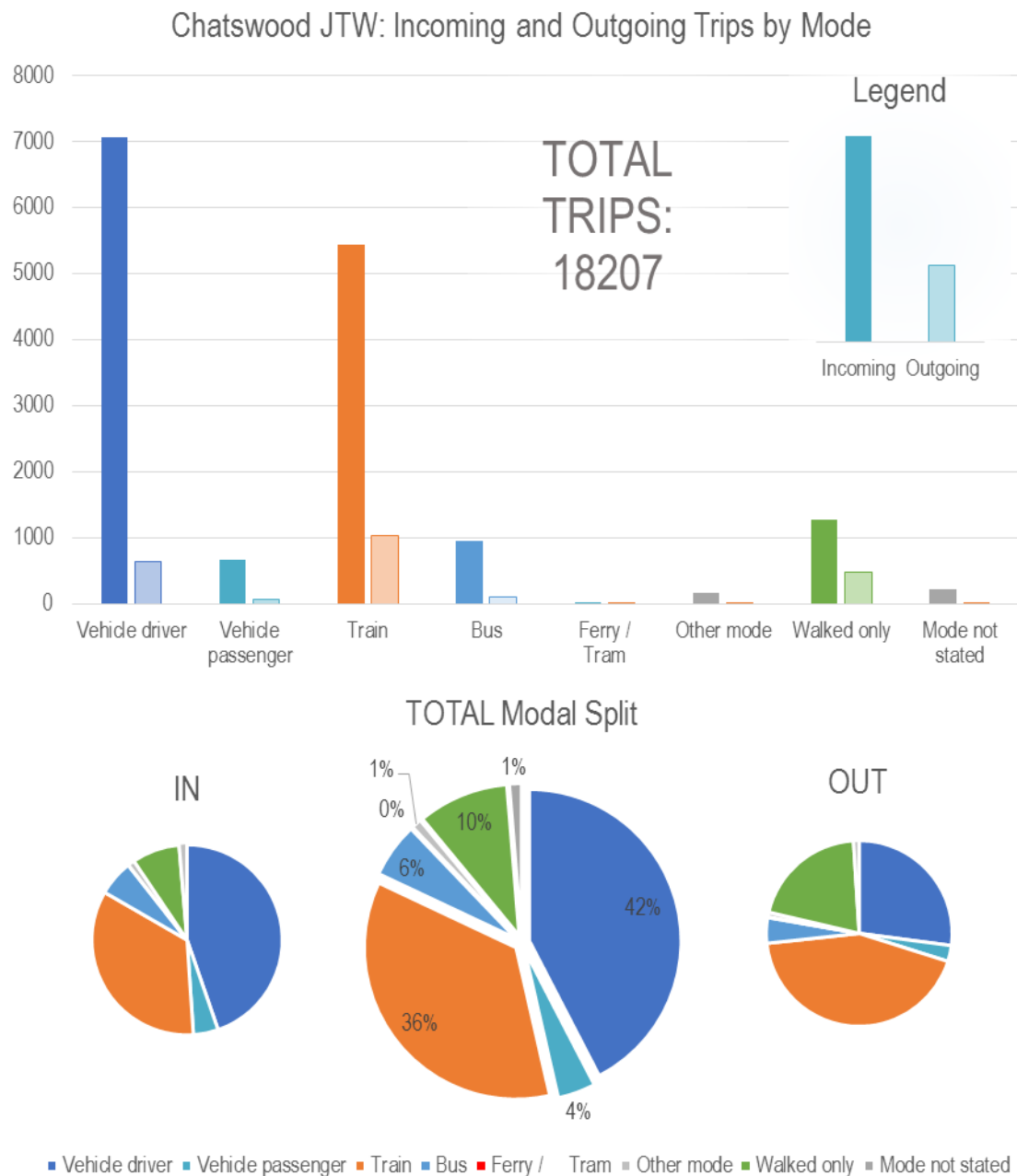
The rate of 1/200m<sup>2</sup> is the applicable parking provision for comparison to Macquarie Park.

#### 5.2.2 Transport Context

The 2011 Journey to Work data summarised in Figure 5.1 indicates a reasonable train mode share and a high walking rate. The private vehicle percentage is 46%, which is much lower than the Macquarie Park goal of 60%. However, this favourable mode split is influenced by a variety of factors:

- **Train mode share:** Chatswood is a major station serviced by all services of the T1 North Shore & Northern Line, including limited stops and services terminating at Chatswood. The business district is also reasonably compact around the station;
- **Future train mode share:** *Sydney's Rail Future* and the *NSW Long Term Masterplan* propose the temporary termination of the North West Rail Link at Chatswood. This will give a direct connection from the northwest to Chatswood. With the possible extension of the rapid transit line across the harbour, Chatswood would become even more accessible by rail;
- **Cost of parking:** Chatswood has a relatively high cost of parking which contributes to discouraging car trips;
- **Bus:** Chatswood serves as a focal point for bus services on the North Shore;
- **Walking mode share:** a 10% Walking mode share is supported by the integration of residential space in and around the business centre; and
- **Land use structure:** Chatswood is a more “compact” centre around transport hubs with a far greater proportion of employees located around bus transport than is the case in Macquarie Park.





Source: BTS Journey to Work Database, 2011

**Figure 5.1: Chatswood JTW Trips and Modal Share (2011)**

### 5.3 GREEN SQUARE

This industrial area has been “renewed” with its transformation into “... a place of innovative housing design, bespoke business and retail, and creative and engaged communities ...” – (City of Sydney Website), accompanied by a large investment in civic infrastructure. It should be noted that Green Square is considered an emerging commercial centre, with accompanying residential development, not yet fully realised.

#### 5.3.1 Off-Street Parking Maximum Rates

Bitzios Consulting undertook the *Green Square Town Centre Parking and Traffic Study* in 2012/2013 for City of Sydney. This included an assessment of the commercial parking rates attached to the Mixed Use developments planned. Green Square is covered by the *South Sydney DCP 11* which prescribes 1 space/125m<sup>2</sup>.

Following investigations of the current planning documents, this parking rate was found to still be current for the Green Square Precinct. However, it should be noted that the City of Sydney has updated their location-specific DCP (*Green Square Town Centre DCP 2012, amended 2014*), referring directly to the *LEP 2012*. This also details the maximums for a slightly wider area surrounding Green Square in Section 7.6 of that document, with the following maximums depending on the Floor Space Ratio (FSR).

**Table 5.1: Maximum Parking Rates – Green Square**

Land Category	FSR	Space / m <sup>2</sup>
D	Less than 3.5:1	1 space / 175 m <sup>2</sup>
E	Less than 2.5:1	1 space / 125 m <sup>2</sup>
F	Less than 1.5:1	1 space / 75 m <sup>2</sup>
D, E or F	Greater than the above restrictions	Determined by a formula

#### 5.3.2 Transport Context and Mode Share

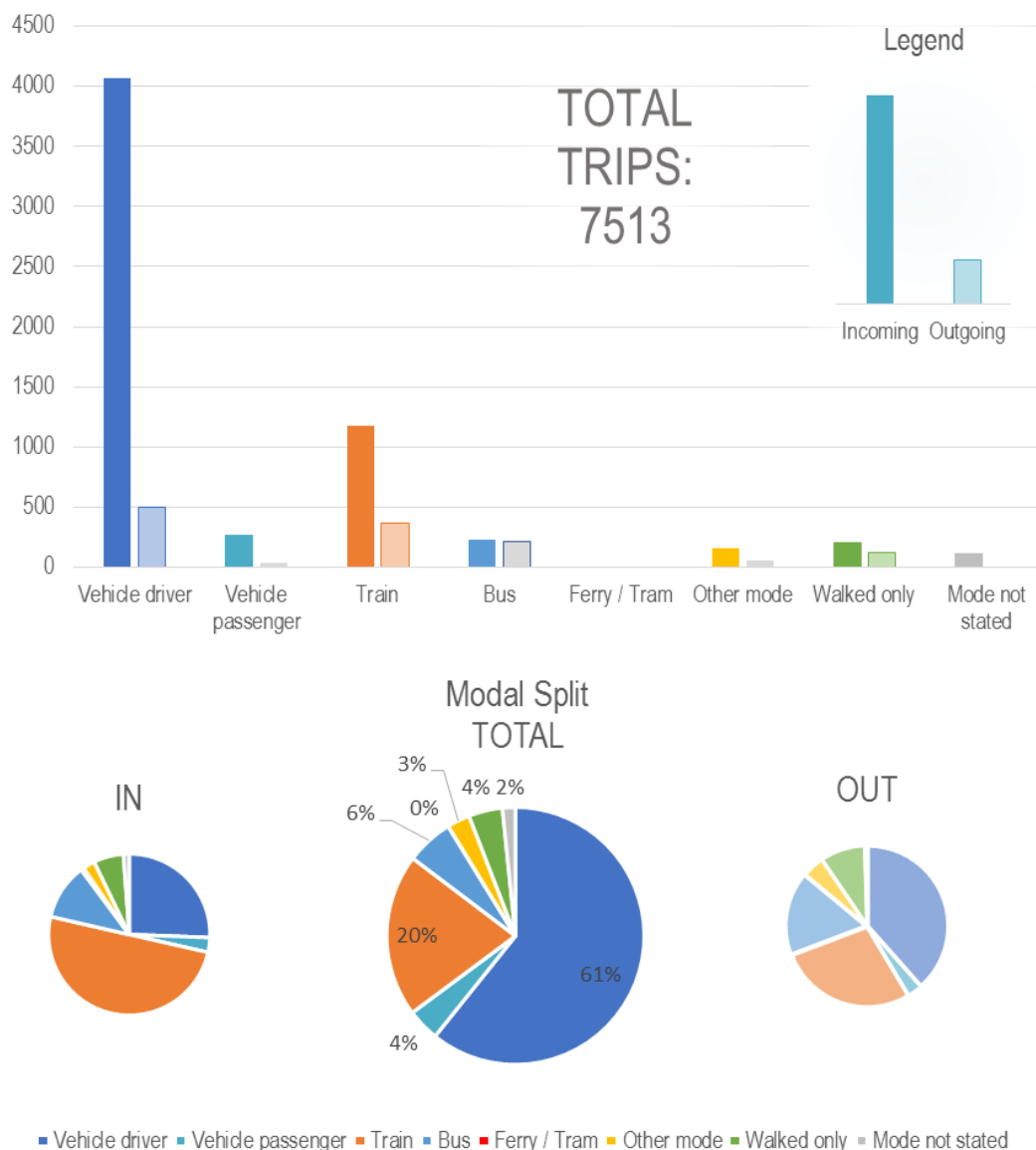
The 2011 Journey to Work data summarised in Figure 5.2 indicates a level of car dependence in the order of 65% (vehicle driver or passenger) with a reasonably high train mode share of 20%. Buses account for approximately 6% of total trips. Some relevant factors related to this precinct are:

- despite a prominent location and compact town centre, train trips to the precinct are not as high as anticipated. The T2 Airport / East Hills line servicing Green Square Station typically requires a transfer at Central Station for most trips to Green Square, which could function as a deterrent;
- although the 370, 309, 310 and M20 bus routes service the precinct directly, and the 343, 345 and 348 pass nearby, they are not particularly frequent and so bus mode share is low; and
- “other mode” (3%) and “Walked Only” (4%) are relatively low but to be expected.

Public Transport and Active Transport modes could be set to grow soon as high density residential and mixed use development in the surrounding areas continues (particularly in Zetland, Alexandria and Waterloo). The accessibility of those modes and the nature of the future development suggests the potential for their use for more “outbound” Journey to Work trips.

Green Square is being established as more of a traditional “small plate” office precinct compared to Macquarie Park’s “large plate” business park predominance.

## Green Square JTW 2011: Incoming and Outgoing Trips by Mode



Source: BTS Journey to Work Database, 2011

**Figure 5.2: Green Square JTW 2011: Incoming and Outgoing Trips and Modal Share 2011**



## 5.4 NORTH SYDNEY

Secondary to the Sydney CBD, this is a large traditional business centre, with adjacent established residential areas and specialised business/retail centres (e.g. Neutral Bay, Crows Nest).

### 5.4.1 Off-Street Parking Provision

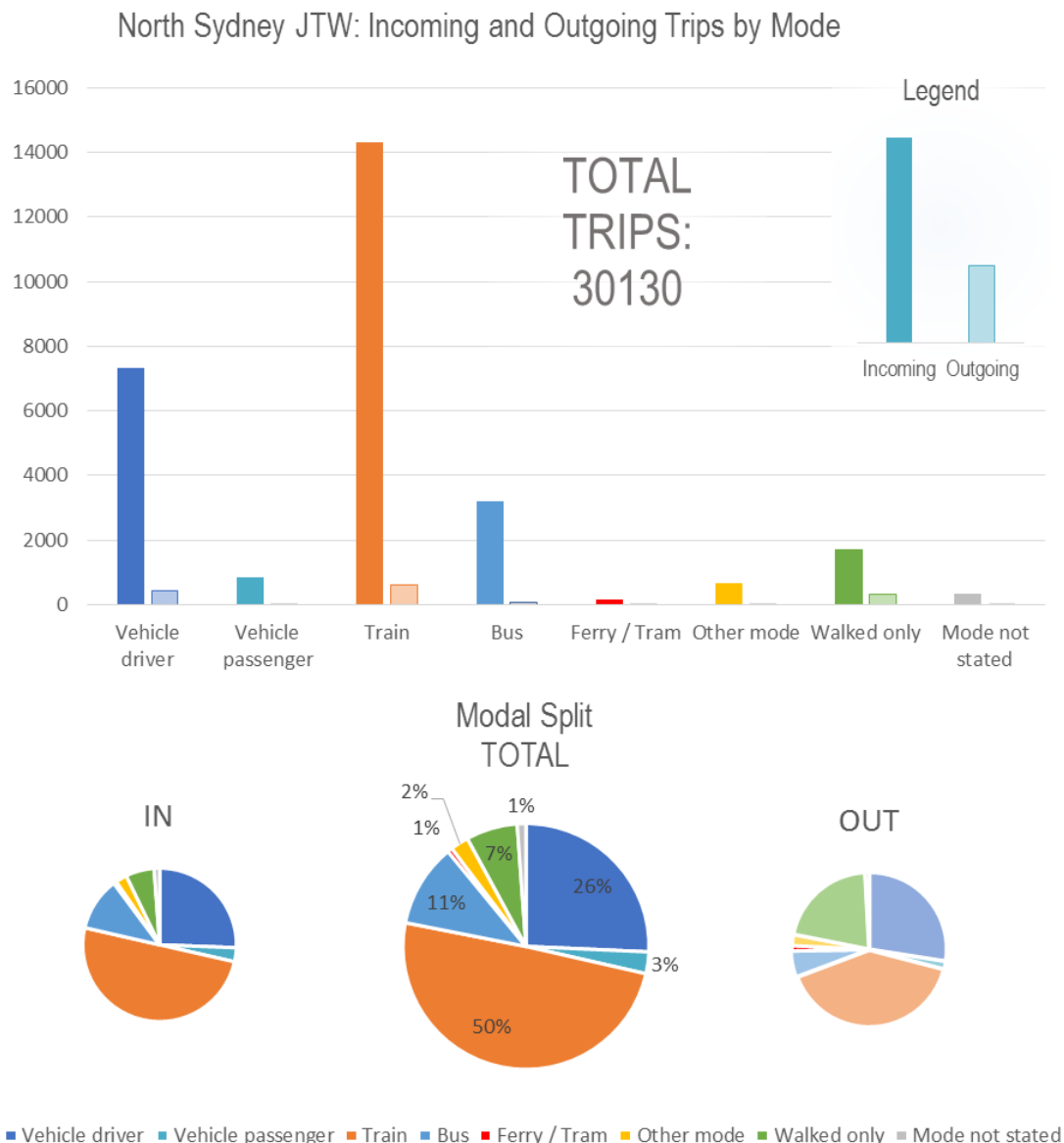
As defined by the North Sydney DCP, the North Sydney business district along with Milsons Point and St Leonards has a maximum provision rate of 1 space / 400m<sup>2</sup> of commercial floor space.

### 5.4.2 Mode Share and Transport Context

The 2011 Journey to Work data for North Sydney is summarised in Figure 5.3. Notably:

- train mode share is high at 50% as North Sydney Station (and Milsons Point) are serviced by the T1 North Shore and Northern Line. These stations were rebuilt in their current locations in the early 1930's. This captures incoming trips from the North, City Centre, and West without a transfer; and
- the area is well serviced by bus, producing a high bus mode share of 11%.

North Sydney by its location and historical evolution is seen as a significantly “higher value” product compared to Macquarie Park with more traditional office space/form compared to Macquarie Park as well. It is an established centre with long established public transport infrastructure.



Source: BTS Journey to Work Database, 2011

**Figure 5.3: North Sydney JTW 2011: Incoming and Outgoing Trips by Mode**

## 5.5 RHODES

### 5.5.1 Off-Street Parking Maximum

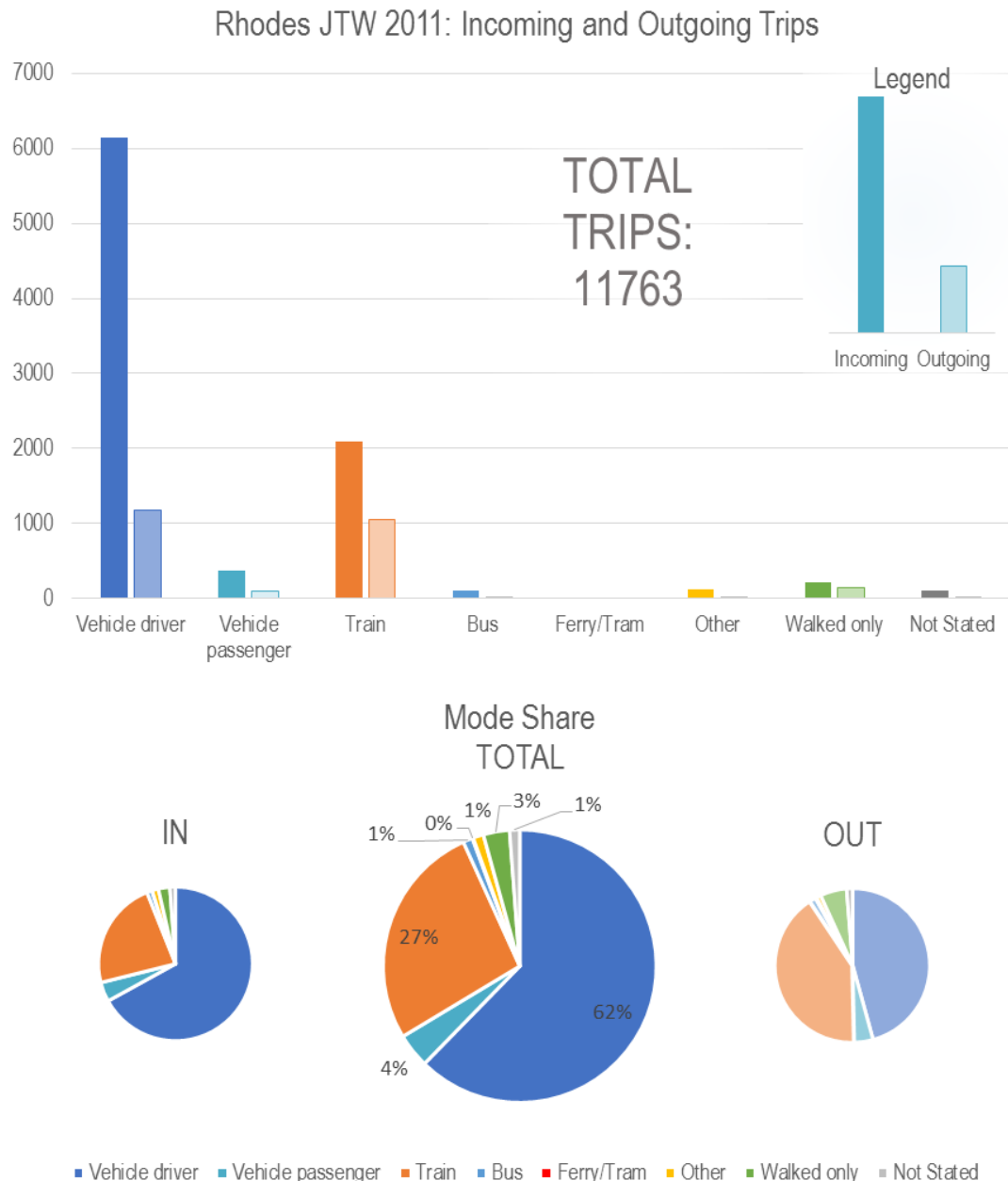
The Rhodes West DCP specifies on-site commercial and retail car parking provision at 1 space/ 40m<sup>2</sup> GFA.

### 5.5.2 Mode Share and Transport Context

The 2011 JTW trips for the Rhodes precinct are summarised in Figure 5.4. Although the Rhodes precinct is within a “peninsula” with comparatively reduced road connectivity, 66% of all commuter trips were by private vehicle in 2011 and 34% by other modes. The precinct is mainly serviced by congested major roads: Concord Road, Homebush Bay Drive, connecting to the M4 and Parramatta Road to the South and to Victoria Road to the North.

- due to the proximity to Rhodes (served by the T1 Northern Line), a number of trips are made by train, with the respective mode share in the order of 27%;
- bus travel however is very low at 1%, possibly impacted by the road connectivity, and high rail amenity; and
- walkers at 3% actually outnumber bus commuters.

Rhodes provides a good comparison to Macquarie Park and achieves lower car usage with (now) higher provisions of parking per sqm GFA.



Source: BTS Journey to Work Database, 2011

**Figure 5.4: Rhodes Journey to Work 2011: Incoming and Outgoing Trips by Mode**

## 5.6 NORWEST BUSINESS PARK

### 5.6.1 Off-Street Parking Provision

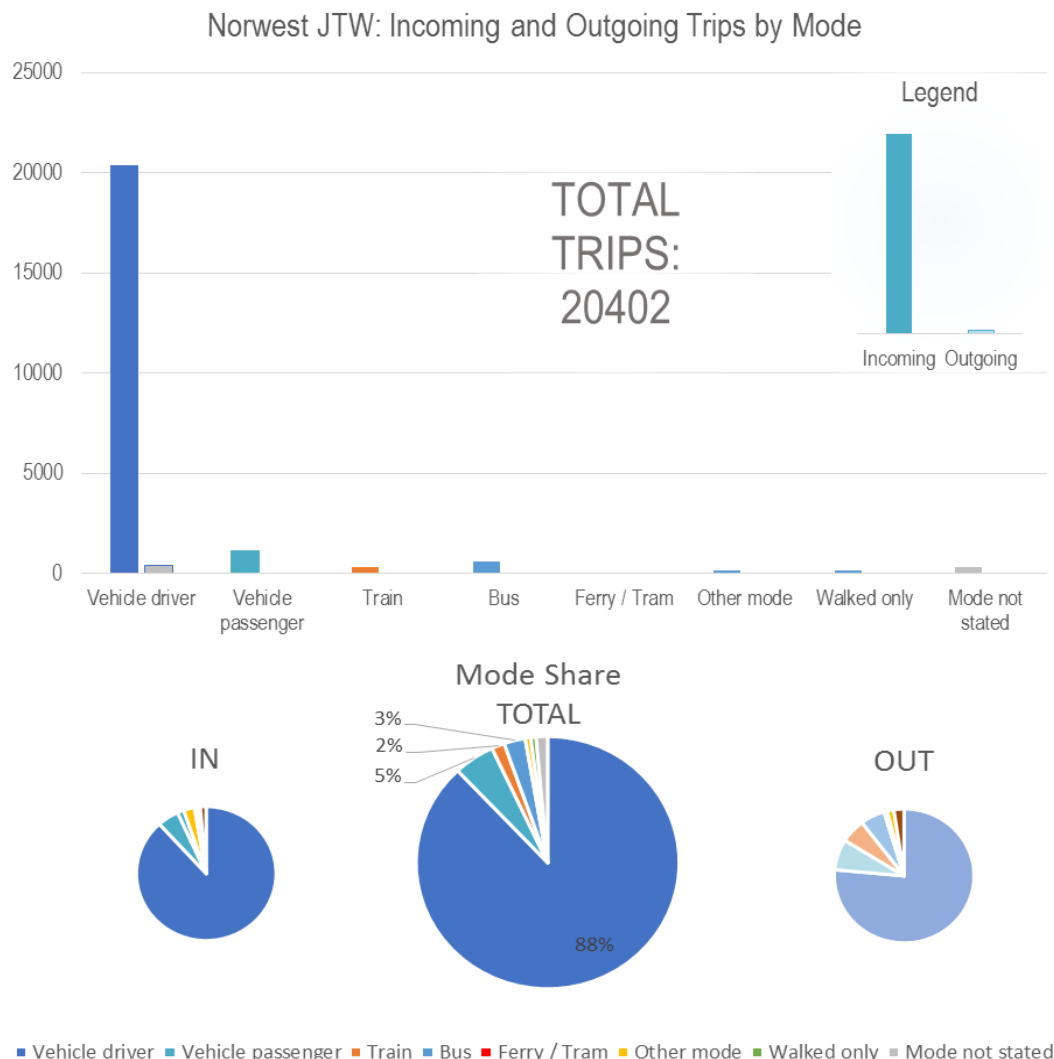
The *Hills Shire Development Control Plan 2013* outlines the maximum off-street parking provision in Part C Section 1. Commercial premises are afforded 1 space per 25m<sup>2</sup> GFA, while “Centre Commercial” has a rate of 1 space per 40m<sup>2</sup>. Norwest is not classified as Centre Commercial, so the 1/25m<sup>2</sup> applies.

### 5.6.2 Mode Share and Transport Context

The 2011 JTW data is summarised in Figure 5.5 showing a high dependency on car travel (93% of all commuter trips by private vehicle) with all other modes accounting for a negligible number of trips. However, factors affecting mode choice include:

- proximity to the M7 and M2, along with urban form and good road network support vehicle dominance;
- current train trips are expected through Blacktown or Seven Hills stations, transferring to buses to the precinct. This results in a mode share <2% and may also lower the bus trips counted by the JTW survey;
- the train mode share is expected to increase with the provision of rail services to the precinct upon completion of the North West Rail Link. This will include a station at Norwest, providing connection to the further North West, Epping, Chatswood and potentially the CBD;
- Buses service the precinct directly although infrequently, often via the T-Way, taking 3% of mode share and most non-vehicle trips; and
- Overall, the precinct is well serviced by the road system but has poor public transport service.

Norwest Business Park is essentially a car-dominated centre which reflects its current parking rates.



Source: BTS Journey to Work Database, 2011

**Figure 5.5: Norwest Journey to Work 2011: Incoming and Outgoing Trips by Mode**

## 5.7 OLYMPIC PARK

### 5.7.1 Off-Street Parking Provision.

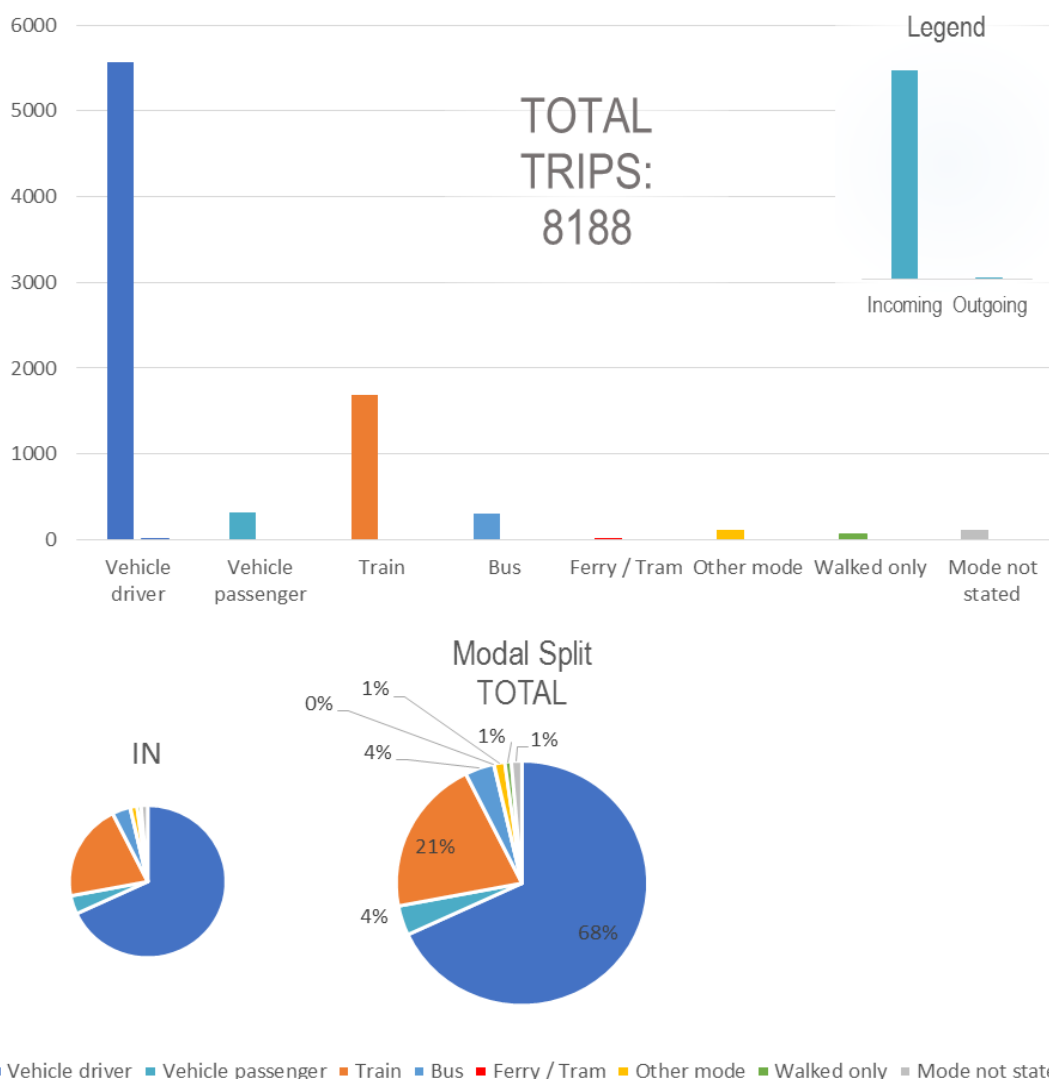
The Sydney Olympic Park Authority *Master Plan 2030* specifies 1 space per 80m<sup>2</sup> of commercial GFA (Section 4.7 Access and Parking Table 4.10).

### 5.7.2 Transport Context

The 2011 JTW Data is summarised for Olympic Park in Figure 5.6. The precinct is largely car dependent (72% vehicle trips), with substantial rail usage at 21% of all trips. All other mode share have a very lower share of the incoming travel market. The contributing factors to this data include:

- The precinct is internally well planned, while external access to the precinct is facilitated by major arterials: Rod Laver Drive, Parramatta Road, and the M4Western Motorway.
- Olympic Park Station is well situated within the central employment precinct. However, during non-event operation a transfer at Lidcombe is required. This may or may not impact the train mode share.
- While pedestrian amenity is high, the connectivity to the precinct is poor, with major roads (particularly the M4) interrupting pedestrian desire lines. The area is also large with minimal residential development.
- The proposed Parramatta Light Rail would introduce faster direct connections to the west and an alternative to current bus services (now at 4% of mode share).

Olympic Park JTW: Incoming and Outgoing Trips by Mode



Source: BTS Journey to Work Database, 2011

**Figure 5.6: Olympic Park Journey to Work 2011: Incoming and Outgoing Trips by Mode.**



## 5.8 PARRAMATTA

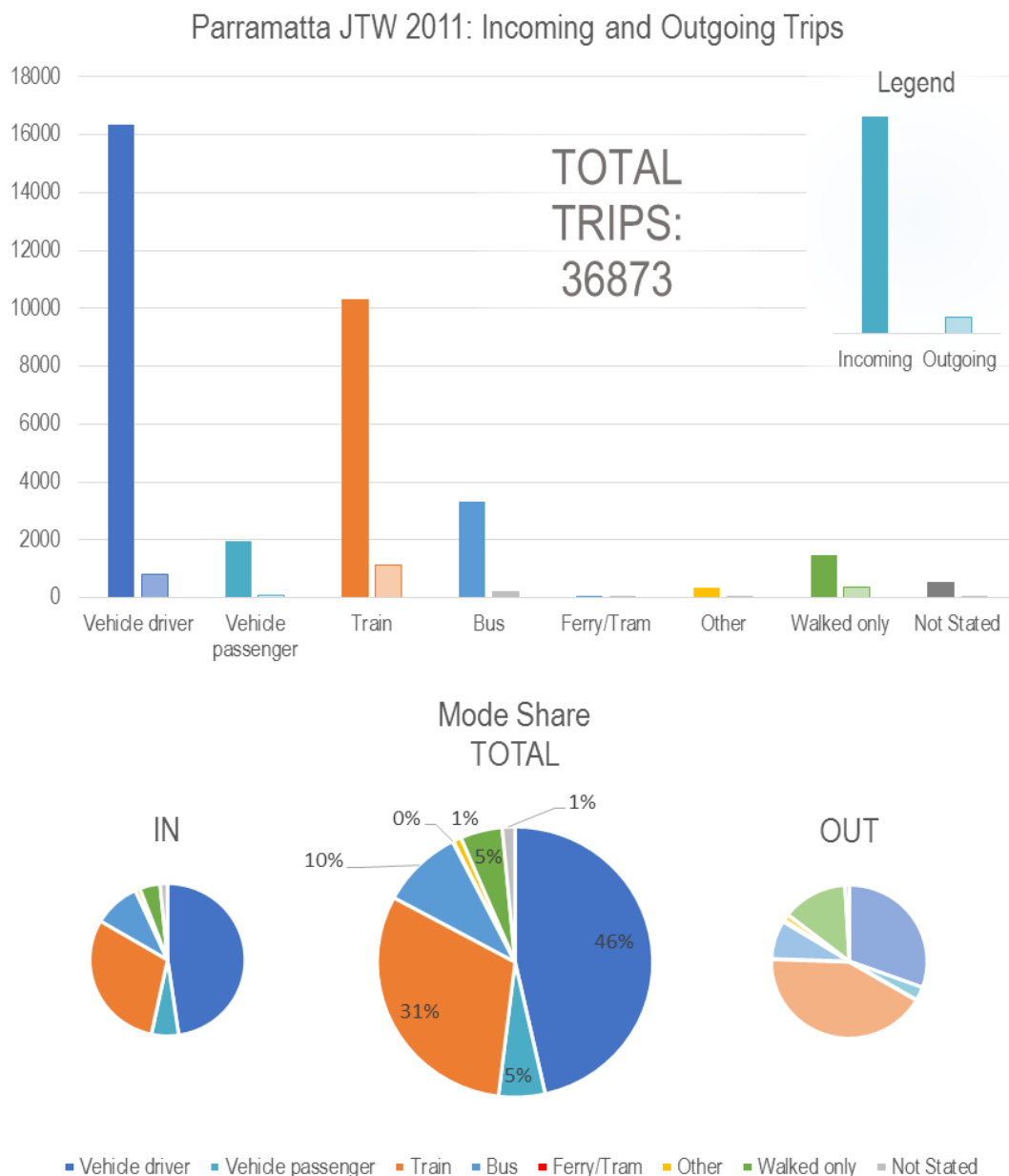
### 5.8.1 Off-Street Parking Provision

The Parramatta City Centre Local Environmental Plan 2007 (Clause 22C) stipulates a maximum off-street parking provision of 1 space per 100m<sup>2</sup> of commercial floor space.

### 5.8.2 Transport Context

The 2011 JTW is summarised in Figure 5.7. Notably, Train and Bus trips account for 41% while vehicle trips total 51%, i.e. Parramatta just surpasses Macquarie Park's target mode share. Walking is substantial (5%). This is supported by:

- Good bus amenity to the precinct: Parramatta is a major bus interchange with surrounding residential areas within a good catchment distance;
- Parramatta Station is a major station servicing the T1 Western Line, T5 Cumberland Line and Blue Mountains Line, with express services to the city. This allows a relatively high rail share at 31%.
- Mixed land uses and adjacent residential areas support the slightly higher 5% walking trips.



Source: BTS Journey to Work Database, 2011

**Figure 5.7: Parramatta Journey to Work 2011: Incoming and Outgoing Trips by Mode.**

## 5.9 COMPARISON & REGRESSION ANALYSIS

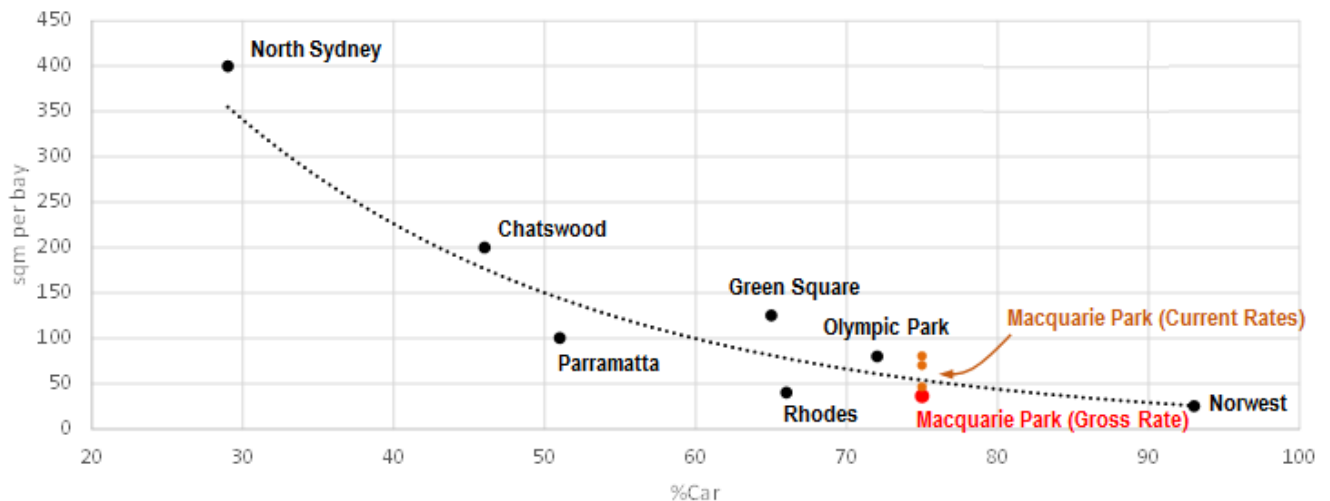
Table 5.2 and Figure 5.6 provide a comparison of the parking rates and mode share for Macquarie Park and the other centres.

**Table 5.2: Parking Rates and 2011 Journey to Work Centre Comparison**

Centre	Parking Rate	Area (km <sup>2</sup> )	Trip Totals	IN / OUT	Total Mode Share			
					Vehicle*	PT	Walk	Other
North Sydney	1/400m <sup>2</sup>	0.53	30,130	95% / 5%	29%	61%	7%	3%
Chatswood	1/200m <sup>2</sup>	0.56	18,207	86% / 14%	46%	42%	10%	2%
Green Square	1/125m <sup>2</sup>	0.76	7,513	82% / 18%	65%	26%	4%	5%
Parramatta	1/100m <sup>2</sup>	0.94	36,873	93% / 7%	51%	41%	5%	3%
Olympic Park	1/80m <sup>2</sup>	4.1	8,188	100% / 0%	72%	25%	1%	2%
Macquarie Park	1/80m <sup>2</sup>	4.8	44,847	98% / 2%	75%	22%	2%	3%
	1/70m <sup>2</sup>							
	1/46m <sup>2</sup>							
Rhodes	1/40m <sup>2</sup>	1	11,763	78% / 22%	66%	28%	3%	2%
Norwest	1/25m <sup>2</sup>	4.39	23,646	97% / 3%	93%	5%	1%	1%

\* Car as driver plus car as passenger

Using an exponential line of best fit, a relationship between the parking provision rate and the Private Vehicle Mode Share was extrapolated. In the case of Macquarie Park, the Gross Parking Provision Rate was used (i.e. the total floor space divided by the total parking supply). The parking rates for other centres refer to those from the relevant DCPs. The analysis is shown in Figure 5.8. It is important to note that while Figure 5.8 shows the 3 parking rates currently applicable in Macquarie Park (in orange), the Gross Parking Provision Rate (in red) equates to 1/36m<sup>2</sup>. This is a consequence of the more favourable parking rates applied in the past and the fact that the Macquarie Centre parking spaces are included in that rate.



Source: Private Vehicle Mode Share: BTS 2011 JTW  
 Parking Rate: DCP  
 Mac Park Parking Rate: In-Situ Floor space and Parking Supply.

**Figure 5.8: Comparison of JTW Mode Shares and Parking Rates**

Considering Macquarie Park's target of 60% car access modal share (by 2031), this would appear to equate to an "average" parking supply rate of approximately 1/100sqm (across the entire precinct). However, it is important to note that the other centres with lowest parking rates are established, traditional commercial centres, characterised by more denser, conventional office blocks, unlike Macquarie Park currently transitioning between light industrial and commercial land uses, with large floor plates and longer "last-mile" walking distances. Rhodes and Parramatta are also notable outliers, substantially outperforming the trend line in terms of lower car mode shares. In the case of Parramatta, a high level of public transport accessibility and familiarity, with a compact centre and good walkability helps dissociate the car access mode share from the parking rate.

It is interesting to note that Macquarie Park attracts a total number of journey to work trips (approximately 45,000) much higher than any other centre included in this comparison. It is in fact comparable in size to (North Sydney + Chatswood) or even (Green Square + Rhodes + Norwest). This factor, combined with the high proportion of car trips, helps put in perspective the congestion issues observed in the precinct and the importance of using appropriate parking rates as one lever to manage congestion effects into the future.

## 6. SITE VISIT OBSERVATIONS

A visual inspection of typical parking utilisation and congestion issues in the study area was carried out on the 24<sup>th</sup> November 2014 between 7.45am and 12.00pm. The main purpose of this site visit was to identify the level of parking demand and any traffic-related issues. These matters are summarised below.

### 6.1 EXISTING PARKING SITUATION

The inspection included an assessment of all on-street parking spaces. A limited number of public off-street car parks were observed as most of these facilities are accessed through boom gates or garage doors. The majority of on-street parking is time restricted with limits including: 1 hour, 2 hour, 4 hours and 12 hours (metered parking at \$2.30/hour or \$11/day). By 9.00am, off-street and on-street parking was estimated to be at about 85% capacity, increasing to about 90-95% capacity by 10.00am.

- observations at specific on-street parking locations were:
  - by 8.30am, most 12P spaces in Waterloo Road, south of Lane Cove Road were occupied;
  - similarly, by 8:50 all 12P spaces in Griffnock Avenue, Coolinga Street and Byfield Street were occupied;
  - between 9.00am and 3.00pm, the peak hour clearways restrictions on Talavera Road and Waterloo Road do not apply. The 2hour parking spaces on these two streets appeared to be well utilised;
  - all streets within the North Ryde / Richardson precinct were parked out early including the service road behind Goodman Fielder, Newbiggin Close, Julius Avenue and Richardson Place;
  - most parking spaces in Wicks Road were unoccupied throughout the visit;
  - all 12 hour restricted spaces in Eden Park Drive were occupied by 10.00am; and
  - it appears that most parking spaces in streets parallel and in the vicinity of bus stops in Epping Road and where no parking restrictions apply (for example Lucknow Road) are occupied from early morning by commuters to the city. This suggests the need to investigate the appropriateness of implementing restricted parking at these locations.



**Figure 6.1: Site Visit Photos: (l) Example of access operation, (m) Griffnock Avenue parked out at 8:30am, (r) Off-street parking utilised**

- off-street parking observations included:
  - parking spaces along the internal roadways and some off street parking facilities within the area situated on the south west corner of Lane Cove Road with Talavera Road were at either near capacity or reserved for tenants of the buildings;
  - by 10.00am, parking facilities for McDonalds and the Epson HQ buildings were fully occupied; and
  - the Optus visitor car park in Optus Drive had a small number of vacant visitor spaces at about 10.00am. However, all the 4 hours limited spaces near Epping Rd were occupied.



## 6.2 TRAFFIC RELATED ISSUES

Traffic issues observed in and around the study area included:

- significant congestion was observed along Epping Road, Lane Cove Road and the M2 southbound during the morning peak period;
- long queues were observed on the off-ramp from the M2 to Delhi Road. This is caused by the provision of only one traffic lane in the eastbound direction;
- a large number of vehicles were observed travelling from Epping Road to Lane Cove Road via Wicks Road and Waterloo Road then right turning onto Lane Cove Road northbound. As a result, long queues and congestion occur in Waterloo Road at Lane Cove Road. These vehicles appear to be avoiding the junction of Epping Road with Lane Cove Road. This situation eases considerably either side of the peak periods; and
- no specific issues at off-street car park accesses were observed (i.e. vehicles queuing on the main road waiting to enter specific car parks).

## 7. STAKEHOLDER CONSULTATION PROCESS

### 7.1 KEY STAKEHOLDERS

Consultation with key stakeholders took place during the initial part of this study to gather parking and traffic issues (as perceived by stakeholders) as well as testing attitudes towards the importance of parking supply on different types of development in Macquarie Park and in terms of the viability of various development products as the market changes over time. This allowed for a better understanding of where Macquarie Park is positioned in terms of its competitive advantage now and into the future.

The consultation process took place during late December 2014 and in January 2015. A list of relevant organisations for consultation was identified by the City of Ryde. The list of organisations and their respective representative(s) are shown in Table 7.1.

**Table 7.1 List of Key Stakeholders**

Organisation	Representative	Description	Consultation Method
Jones Lang LaSalle	Denys Bizinger	Real estate firm	In person
Goodman	Will Dwyer	Property owner	In person
Stockland	Simon Botterill	Property owner	By Phone
AMP Capital	Jeff Peers	Property owner	By Phone
Optus	Andrew Parker	Tenants	By Phone
Macquarie Park Transport Management Association	Rebecca Lehman	Non-profit association that aims to achieve an efficient and sustainable transport system for the precinct	By Phone
Macquarie University	Cameron Kline	University	By Phone

Three additional stakeholders that were intended to be consulted with could not participate at the time. These were:

- Johnson & Johnson (tenants);
- Novartis (property owner); and
- Colliers Commercial (real estate firm);

These organisations were contacted multiple times by phone and/or email. For different reasons, a meeting or phone discussion was still not able to take place.

Minutes were recorded for all meetings and these are attached in Appendix A. A summary of the key findings obtained as part of the stakeholder consultation process is shown below.

### 7.2 CONSULTATION QUESTIONS AND RESPONSES

***What attracts development to Macquarie Park as opposed to other centres? That is, what's its competitive advantage and for what types of development or businesses? Is this expected to change over the next 10 years?***

**Responses:**

- value for money - brand new buildings compared to other centres, "cheaper than Sydney and North Sydney";
- large floor plates / developable sites available - business consolidation opportunities;
- location - still quite close to CBD, "better located than Homebush and Parramatta";
- competing businesses want to be "where their competitors are". Networking opportunities are present. "They like being there". Good interplay between technology, medical and university;
- good train links;
- flexibility to increase FSR on existing plots;

- large floor plates / developable sites available - potential for combining offices with laboratories and workshops;
- some level of "social infrastructure" in place compared to other centres and a development density that is gradually intensifying;
- some stakeholders believe that these factors are unlikely to change in the next 10 years while other made reference to the following:
  - competition with other precincts such as South Sydney is likely to intensify within the next 12 months and beyond. Macquarie Park was referenced as being more "rigid" in terms of land use allocation and development type when compared to this impending precinct; and
  - the need for more residential development in the area was mentioned to attract more skilled workers, reduce trip distances and reduce the proportion of car trips.

***Are the congestion levels currently experienced in the precinct affecting its attractiveness for development? How important is traffic congestion and parking availability in the decision for a business to locate to Macquarie Park?***

**Responses:**

- traffic congestion is not seen as an issue as bad as parking availability by the majority of stakeholders. Some sites have privileged location to avoid congestion hotspots ("pole position" factor);
- people tend to accept that congestion "is everywhere you go in Sydney". Some improvements occurred recently (M2 upgrade, new ramps, etc.);
- stakeholders called for higher levels of precinct activation to move away from the "homogeneous zoning" current in place, which exacerbates the current congestion issues (i.e. all trips in the same direction);
- congestion was still believed to be a factor influencing workers on their decision to work in the precinct. Some believe that congestion is definitely an issue for prospective tenants;
- the Macquarie Park Transport Management Association has an opposing view. More specifically:
  - congestion adversely affects Macquarie Park's attractiveness;
  - congestion is the "number one issue" in Macquarie Park; and
  - 48/50 survey respondents said it is the number one issue and that it directly offsets benefits of being in Macquarie Park.

***With the precinct's workforce earmarked to double by 2031, what do you think can be done to better manage accessibility to/from the precinct?***

**Responses:**

- more flexibility in land use - more mixed use - to allow higher percentages of walking and cycling to work trips. This will also contribute to a better balance in trip directionality (i.e. trips generated by residential land uses will typically go in the opposite direction of those generated by employment sites);
- North West Rail Link will have some positive effect but it will also lead to increased competition from other future business parks on that line (e.g. NorWest, Cherrybrook?);
- the proposed Parramatta to MP light rail line could be helpful;
- car share schemes are not appealing;
- some buildings have shuttle services in place to provide connections to the rail stations. These seem to work relatively well;
- the 'drive to work' paradigm must change but viable alternatives must be in place first;
- landowners and employees need to change their outlook to NOT expect free parking;
- Council should review the on-street parking fees - some sections are parked out all day (rates too low?), while other have no demand;
- there should be a NSW Government parking levy in a similar way to other business centres (CBD, North Sydney, Chatswood); and
- There needs to be much better bus services.

***If the congestion levels surrounding the precinct double will Macquarie Park continue to be competitive as a place to locate or expand businesses? That is, how important will congestion and access be in this decision?***

**Responses:**

- some stakeholders believe that Macquarie Park should still be competitive on a price basis for companies that require large spaces. Congestion not seen as the main issue (rents are holding up);
- others think that there would be serious problems - both for workers/businesses and for university and shopping centre - competing centres would benefit;
- traffic and transport issues are in the top two or three issues for tenants; and
- congestion can't double (many parts of the network already operate beyond capacity).

***In your view, is the current public transport provision adequate and how could it be improved?***

**Responses:**

- the current rail provision is not adequate and/or not servicing the right locations. A lot of people come from the north / west. It is not convenient for a large proportion of the MP workforce;
- other stakeholders mentioned that train service is adequate in peak periods but off-peak frequency (15 minutes) is not good enough;
- public transport adequacy is dependent on employee residential location – not good for northern beaches, for example;
- the issue of personal security for women walking to train stations after dark (in winter months) was mentioned. 800m is too far to be a realistic catchment in such situations. Street activation (that should result from zoning changes) would also be helpful for personal security / passive surveillance.
- the network is not designed for commuting – rather for shoppers, students, and locals;
- there is significant demand for express bus and train services between Parramatta and Macquarie Park; and
- not enough bus priority schemes in place.

***Are the current parking rates appropriate? (i.e. number of off-street parking bays to be supplied by each development/site)? Do you think there is too much parking provided on sites or not enough?***

**Responses:**

- developments with poor parking ratios are not competitive at the moment;
- older developments with higher parking ratios are preferred by tenants / businesses;
- there is currently a lot of interest in the fringe areas with a parking rate of 1space/46spm (higher applicable rate in the precinct);
- sites within the "1space/80sqm buffer" simply won't lease. 1/100 is not appropriate for the precinct;
- parking is involved in every deal and there is not enough supply compared to what tenants want or expect;
- there is always demand for short term parking at other sites, and some 'swaps' or cross leasing occurs;
- existing ratios OK until such time a better public transport alternatives are available;
- there is support for differential rates in proximity to rail stations, but they need to be "realistic";
- residential parking rates could be a problem – too restrictive and ignore the fact that most people will want to own a car – unrealistic for one bedroom apartment to have no car space;
- the Macquarie Park Transport Management Association has a different view. More specifically:
  - the current (latest) parking rates are OK for on-site parking, but the pricing (i.e. free) is wrong;
  - applicable rates reflect other centres but staff get free parking;
  - on-street parking is too cheap - this prevents visitors finding spaces;
  - off-street parking requires better management (e.g. some companies fail to enforce issues like double parking and parking in aisles);
  - on-street parking should be rationalised by reducing the number of 12P spaces and use it for other purposes (e.g. bus layover or taxi zones);
  - employees regularly leave workplaces during working hours in order to move cars around in 4P Resident Parking zones; and



- resident Parking Schemes are essential to keep residents on side.

***How much do current businesses depend on parking for their staff? And for their customers?***

**Responses:**

- “parking availability is of key importance” in Macquarie Park;
- this is of particular importance for businesses moving within the precinct;
- strongly dependent for staff;
- visitor parking depends on type of business – e.g. if meetings or presentations are required;
- customer parking is critical for some businesses, but currently employees are favoured over visitors;
- the Macquarie Park Transport Management Association acknowledged that some parking is necessary for staff, especially for those where public transport is non-viable; and
- businesses complain about insufficient parking, but if they go anywhere else there are more severe restrictions on parking - not the same as in Macquarie Park; and
- customer and visitor parking is essential but poorly understood - staff are parking in the Visitor spaces and businesses don't enforce it.

***Could more “restrictive” parking rates be applied over time? What else would need to happen to ensure reduced parking rates did not affect the viability of commercial development?***

**Responses:**

- further reducing current parking rates would be extremely courageous and could have some serious consequences. Some commented that more restrictive parking rates over time makes sense for changing mode share in favour of public transport;
- there would need to be a strong connection between improved public transport and more restrictive rates;
- there needs to be a study to generate evidence of employee residential locations;
- it is unrealistic to force people onto public transport;
- effectiveness of Green Travel Plans was questioned;
- Council needs to be more imaginative about how parking changes would impact residents, including how resident parking schemes could work;
- the Macquarie Park Transport Management Association expanded a bit more on this subject. More specifically:
  - MPTMA would like to see as an outcome of this study a recommended value (charge) for staff parking (e.g. \$140 per month, with perhaps a discount for car pooling);
  - on Mona Vale Road/Ryde Road/Lane Cove Road, there should be Clearways and Bus Priority treatments;
  - MPTMA supports the proposed Parramatta to Macquarie Park Light Rail line, but suggests it should first be piloted as an express bus service to prove the concept; and
  - Green Travel Plans help address the ‘ignorance of alternatives’ issue, but authorities need to also fix the ‘poor experience’ problem (i.e. bus stuck in traffic – same as the car).

## 8. SUMMARY OF EXISTING ISSUES

In general, the parking rates and parking characteristics in Macquarie Park sit somewhere between a car-dominated business park and a traditional non-CBD business centre with office towers (i.e. like Chatswood and Green Square). However, the scale of employment and traffic in Macquarie Park far exceeds other “secondary” centres in Sydney and any parking supply policy change will therefore have a significant effect on future traffic congestion levels.

Stakeholder feedback is mixed but there is a general consensus that whilst parking supply is an important commercial feature, there is some “room to move” in reducing rates in the 1/46m<sup>2</sup> GFA area (i.e. Macquarie Park Area A) before parking limitations actually affect the competitiveness of leasing space and further investment in the area.

Site observations show a clear need for long stay parking in 12P on-street areas and improved management of short stay parking with 4P areas “filling up” by staff and not being available for legitimate customers/visitors.

The key issue for changing parking rates in Macquarie Park appears to be the rate of transition over time related to how quickly public transport services can be added to provide a practical alternative, and how quickly land use change can occur in Macquarie Park office space product type and in employees moving closer (on average) to Macquarie Park. The Urban Activation Precinct initiatives will contribute to this increased number of residents in the vicinity of the study area. Parking supply rate changes should be seen as one factor, albeit an important factor in encouraging land use and public transport changes but managed carefully as Macquarie Park transforms to a slightly different product mix.

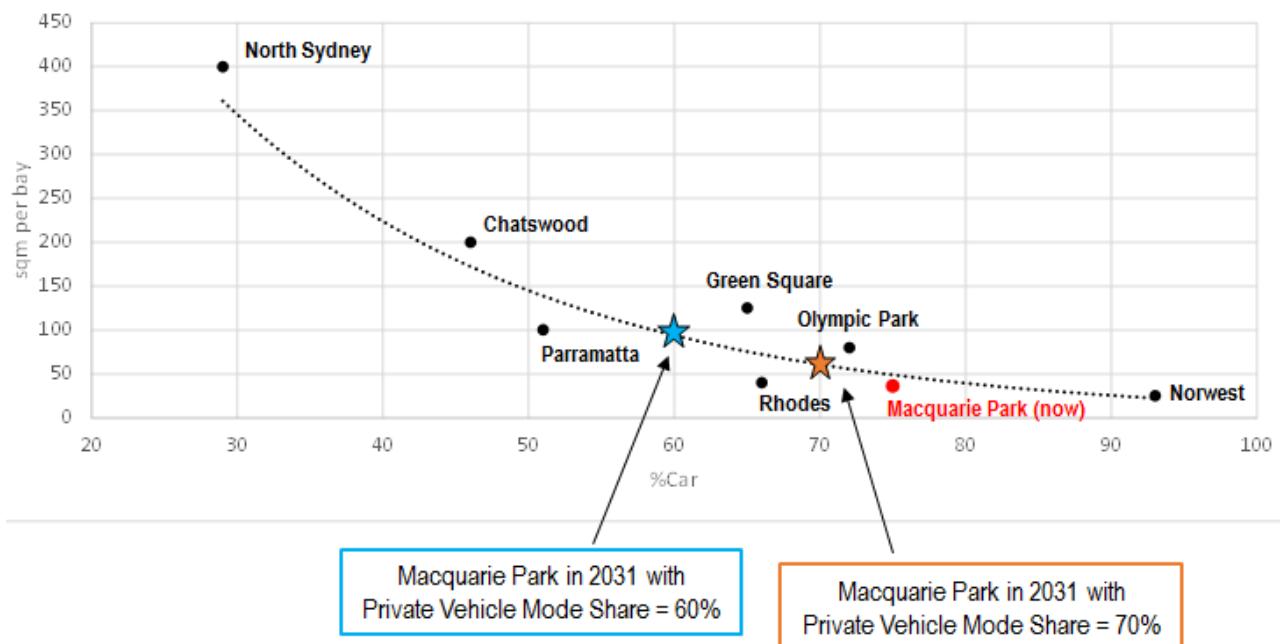
## 9. PARKING STRATEGY DEVELOPMENT METHODOLOGY

### 9.1 OVERVIEW

As part of the development the future parking strategy, the spatial framework for the future parking restrictions was based on the existing precincts A, B and C (refer to Figure 4.1). Four future parking scenarios were formulated for the 2031 year horizons, namely:

- Do Nothing (Business as Usual);
- Scenario 1: even reduction of parking rates across Precincts A, B and C;
- Scenario 2: stronger restrictions near railway catchments (Precinct C); and
- Scenario 3: two precincts only (Precincts B and C combined).

Parking rates were then allocated to the different precincts so that the overall parking rate (square metres per bay) allowed the private vehicle mode share to be reduced to 70% (Option A) and 60% (Option B). These are in comparison to the current mode share indicated by the JTW data of 75% Private Vehicle Share.



**Figure 9.1: 2031 Scenarios (60% and 70% Private Vehicle Mode Share)**

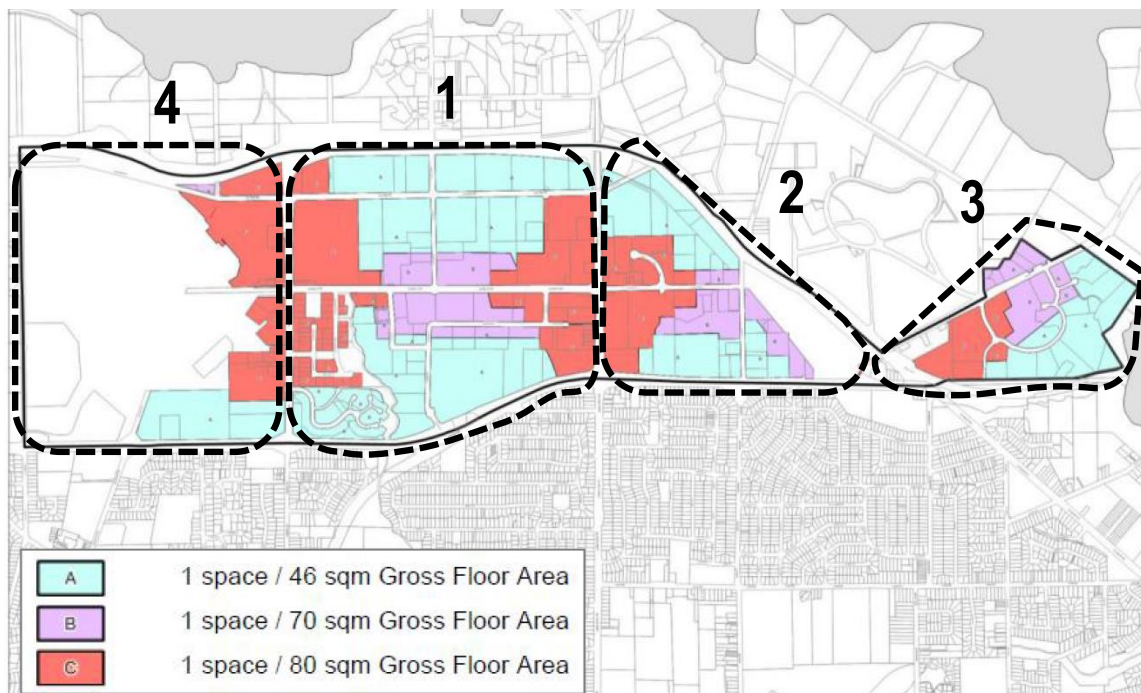
A third option of reducing the private vehicle mode share even further (to 50% by 2031) was initially included in the options to be evaluated. However, as discussed in more detail below, the actions required to achieve such a target proved to be too aggressive and extremely difficult to implement by 2031. A substantial reduction in current parking provision would be required (while combined with the significant redevelopment of the precinct).

### 9.2 FLOOR SPACE ESTIMATION

Council provided an itemised commercial floor space inventory current as of December 2012. This detailed:

- Site Area;
- Existing Gross Floor Area (GFA) and Floor Space Ratio (FSR);
- FSR permitted by the 2008 LEP and consequently the Permissible GFA; and
- Recommended FSR increases and an associated “Uplift GFA”.

The GFAs provided by this inventory were assumed to sufficiently approximate the current floor space in 2015, while the “Permissible GFA” was adopted as the upper limit of total floor space in 2031. Educational, Residential and Retail land uses were identified and excluded. Each Precinct (A, B and C) was further divided into four separate areas, as shown in Figure 9.2.



**Figure 9.2: Sub-Precincts Used in the Assessment**

The results of this analysis are shown below in Tables 9.1 and 9.2 for 2015 and 2031 respectively:

**Table 9.1: 2015 Existing Floor Space Inventory**

2015 Existing Floor Space Inventory (GFA m <sup>2</sup> )								
Area	Commercial				Retail	University	Residential	Other
	A	B	C	Total				
1	365,088	148,891	140,700	654,680			29,792	
2	94,945	18,762	142,759	253,467		5,232		2,990
3		82,263	123,238	205,501				
4	9,400		49,538	58,938	166,237		32,680	6,313
Land Use Totals				1,172,585	166,237	5,232	6,2472	9,302
Total				1,415,829				

**Table 9.2: 2031 Floor Space Estimate / Permissible Planning Capacity**

2031 Floor space Estimate / Permissible Planning Capacity (GFA m <sup>2</sup> )								
Area	Commercial				Retail	University	Residential	Other
	A	B	C	Total				
1	549,125	260,952	355,144	1,165,221			85,536	
2	206,156	40,321	331,585	578,061		5,232		14,383
3		97,366	276,197	373,563				
4	11,588		115,049	126,637	206,622		138,987	7,380
Land Use Totals				2,243,482	206,622	5,232	224,523	21,763
Total				2,701,622				



### 9.3 EXISTING PARKING SUPPLY ASSUMPTIONS

A current inventory of off-street parking is not available. The best estimate of the parking supply available to workers in the area is provided in the report prepared by ARUP (2009), which makes reference to a total of 31,500 spaces. This includes approximately 4,200 spaces associated with retail in Macquarie Centre. Although these spaces are not explicitly tied to a commercial/office land-use, they are open to the public and although they are not intended for long-stay commuter parking, workers have been observed parking there. Residential and educational parking supply is more strictly controlled and therefore generally unavailable to workers; such spaces have been excluded by the estimate in the *ARUP (2009) Report* and in this study.

The parking supply at the Macquarie Centre was recently increased by 1,000 spaces. The total supply used in the investigations completed as part of this study was therefore assumed to be in the order of 32,500 spaces in 2015.

### 9.4 FUTURE FLOOR SPACE ASSUMPTIONS

Table 9.2 makes reference to 2,243,482m<sup>2</sup> of total commercial floor space in 2031. This consists of approximately 1,070,000m<sup>2</sup> of new floor space which corresponds to an annual increase in GFA generally aligned with the typical rate of 50,000m<sup>2</sup> per year. This corresponds to a hypothetical scenario of the precinct being completely developed to full potential. While this is unlikely, it was used as a conservative basis of the calculations.

It was assumed that 50% of the current floor space would be re-developed before 2031 (with revised parking rates applied) while the other 50% would be maintained as is. In summary, the assumptions adopted as part of the future year scenarios development were:

- 50% of the existing floor space will be redeveloped by 2031 (with the new parking rates applied);
- The remaining 50% of the existing floor space retains its current parking supply; and
- The difference between 2031 GFA and 2015 GFA constitutes new development (with the new parking rates applied to 50% of this area);

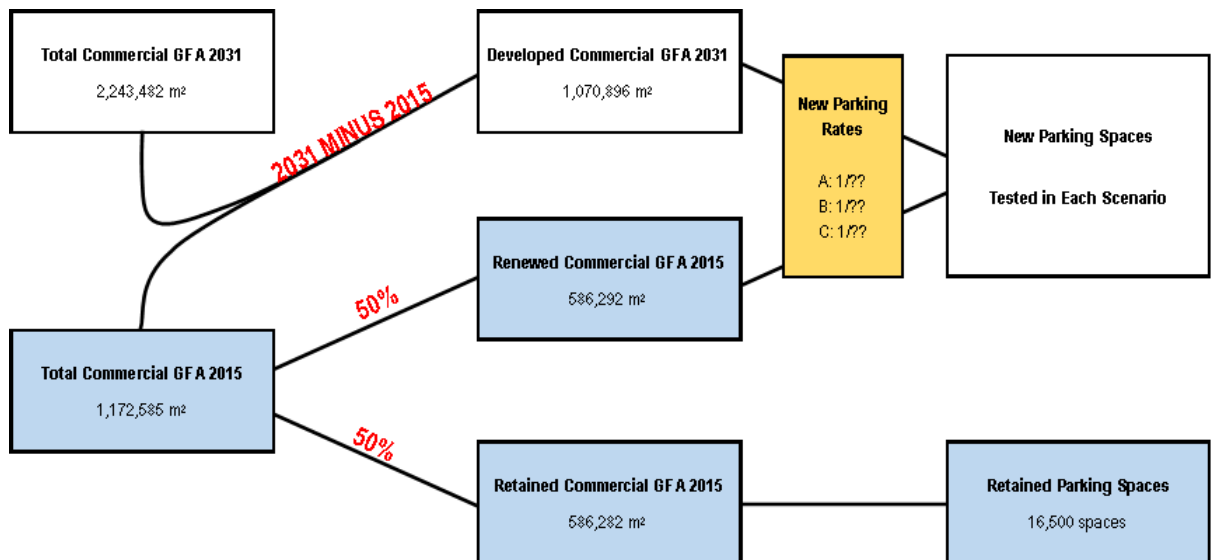
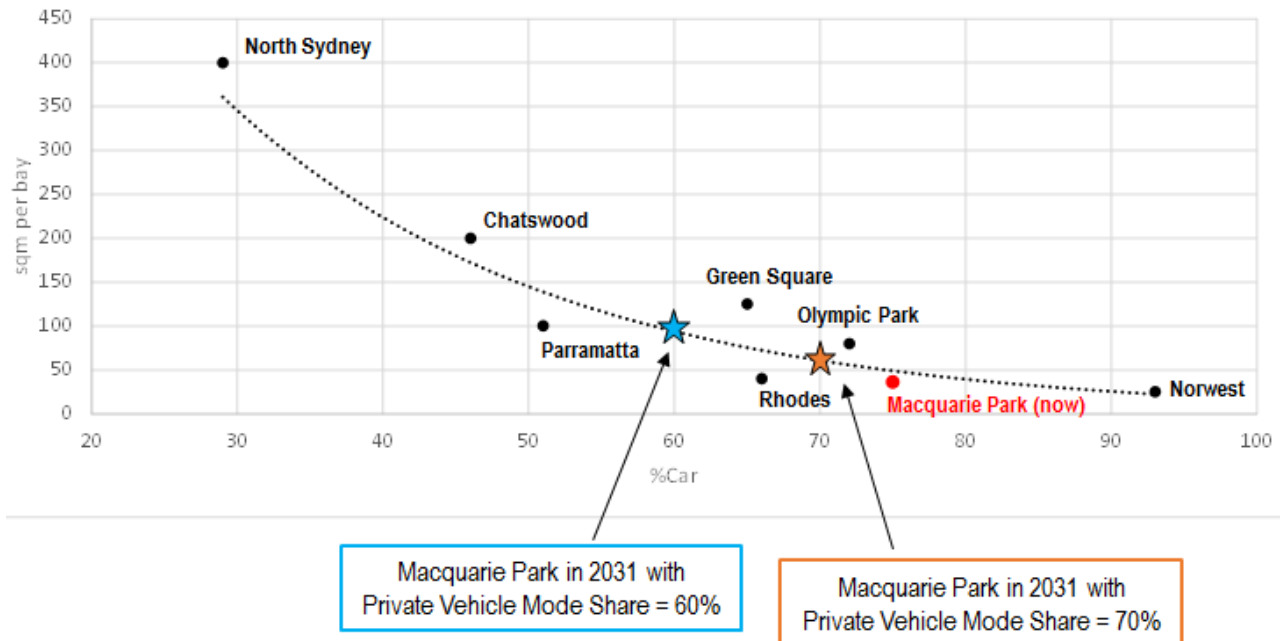


Figure 9.3: Floor space Assumptions and Methodology

## 9.5 PARKING RATE SCHEME FORMULATION

The parking provision rates for each scenario and respective mode share targets were iteratively back-calculated using the Gross Rate vs. Mode Share Regression correlation shown in Figure 9.4.



**Figure 9.4: Centre Comparison Regression with Target Mode Shares**

For each mode share target, the gross parking rate was extracted from the regression, using the following expression:

$$\text{Mode Share \%} = 1271.1e^{-0.043x}$$

Where 'x' is the proportion of GFA to each space.

$$x = \text{Gross Rate} = \frac{\sum \text{Floorspace}}{\sum \text{Parking Spaces}}$$

The various parking provision schemes were then formulated by iteratively choosing Rate A, Rate B and Rate C to achieve the desired Gross Parking Rate (and consequently the associated Mode Share %).

$$\sum \text{Parking Spaces} = \text{Rate}_A * \text{Floorspace}_A + \text{Rate}_B * \text{Floorspace}_B + \text{Rate}_C * \text{Floorspace}_C$$

## 10. PARKING SCENARIOS

### 10.1 BUSINESS AS USUAL SCENARIO

The existing rates were applied to the expected redevelopment to 2031, representing a Business as Usual scenario (i.e. – “Do Nothing”). This results in a total parking provision of 42,384 spaces. Using the regression described above, this scenario is expected to result in a Private Vehicle Mode Share of 74% by 2031 (based on a gross parking rate of 1 space per 1.89m<sup>2</sup> of GFA).

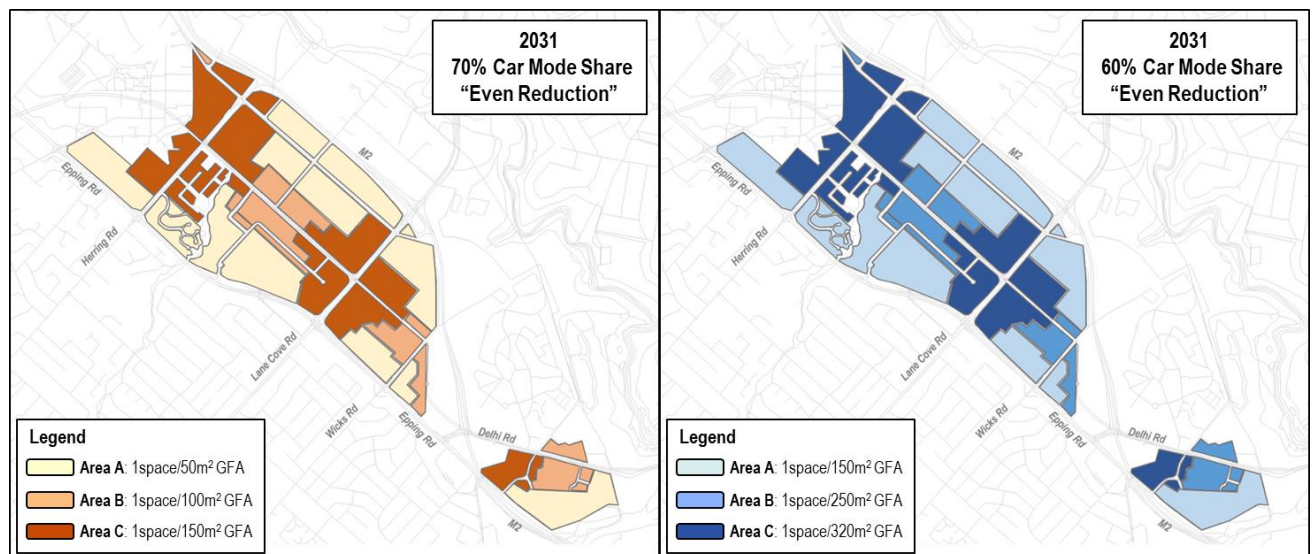
This mode share is well short of the 60% Private Vehicle Mode Share target. It consists of a modest reduction of the current 75% mode share. Maintaining the current parking rates over the timeframe of development and redevelopment assumed is therefore ineffective in sufficiently influencing private vehicle mode share.

### 10.2 SCENARIO 1: EVEN REDUCTION

Scenario 1 sought to achieve the two target mode shares of 70% and 60% using an even reduction in required parking supply across Precincts A, B and C. The results, being the rates required to achieve the targeted car modal shares are shown in Table 10.1.

**Table 10.1: Scenario 1 Results**

Target Mode Share	Gross Rate		Total Spaces 2031	Parking Rates		
	m <sup>2</sup> / Space	Space / m <sup>2</sup>		A	B	C
70%	1.57	1/63m <sup>2</sup>	35,228	1/50	1/100	1/150
60%	1.05	1/95m <sup>2</sup>	23,556	1/150	1/250	1/321



**Figure 10.1: Scenario 1 (Even Reduction) Overview**

### 10.3 SCENARIO 2: “BIAS AROUND STATIONS”

Scenario 2 imposes more stringent parking rates on developments in close proximity to the existing rail stations (especially Precinct C). This area already accommodates more restrictive parking rates compared to the other two areas. This scenario would seek to increase the difference between Precinct C and the rest of Macquarie Park. The required parking rates under this scenario to achieve the targeted maximum car mode shares are shown below in Table 10.2.

Table 10.2: Scenario 2 Results

Target Mode Share	Gross Rate		Total Spaces 2031	Parking Rates		
	m <sup>2</sup> / Space	Space / m <sup>2</sup>		A	B	C
70%	1.61	1/62m <sup>2</sup>	36,012	1/46	1/70	1/200
60%	1.06	1/94m <sup>2</sup>	23,863	1/130	1/200	1/400

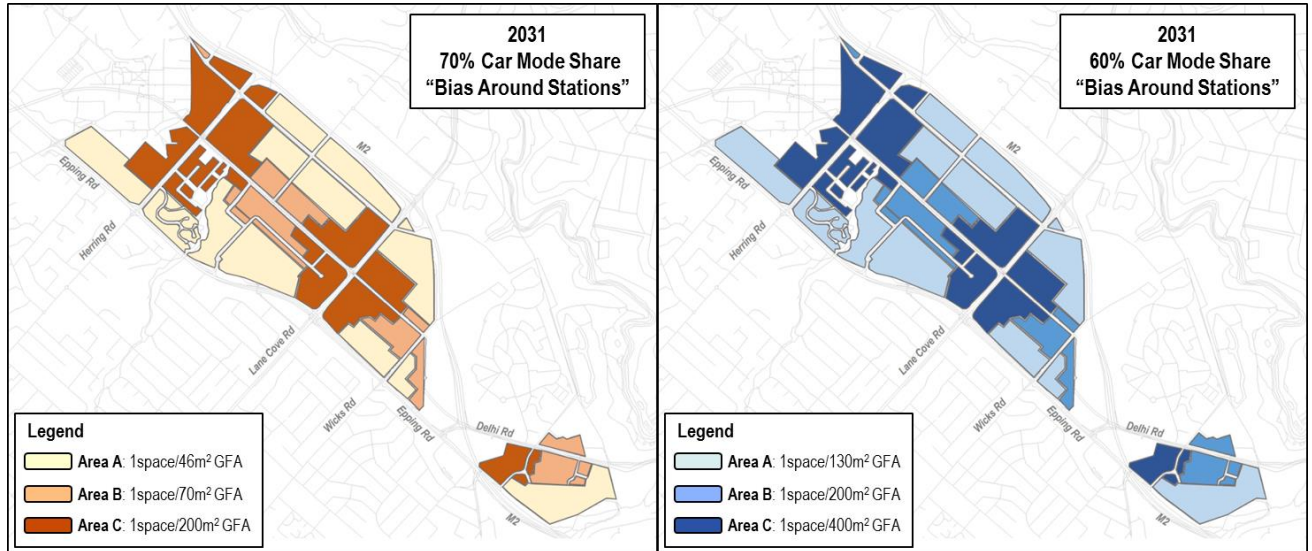


Figure 10.2: Scenario 2 ("Bias around Stations") Overview

#### 10.4 SCENARIO 3: TWO ZONES ONLY

This scenario combines Precincts B and C as a single inner-zone, (hereby named and "New Precinct B"). This new precinct would then have more restrictive parking rates allocated to it compared to outer area (Precinct A). The results of this scenario are shown below in Table 10.3.

Table 10.3: Scenario 3 Results

Target Mode Share	Gross Rate		Total Spaces 2031	Parking Rates	
	m <sup>2</sup> / Space	Space / m <sup>2</sup>		A	B & C
70%	1.62	1/61m <sup>2</sup>	36,380	1/60m <sup>2</sup>	1/100m <sup>2</sup>
60%	1.05	1/95m <sup>2</sup>	23,551	1/150m <sup>2</sup>	1/300m <sup>2</sup>

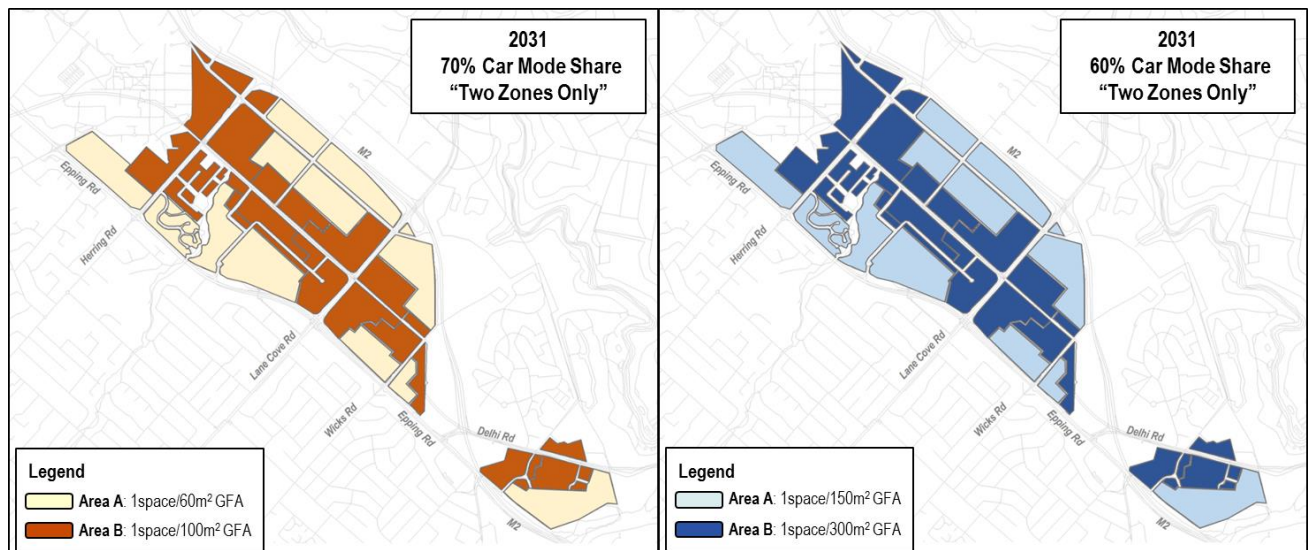


Figure 10.3: Scenario 3 ("Two Zones Only") Overview

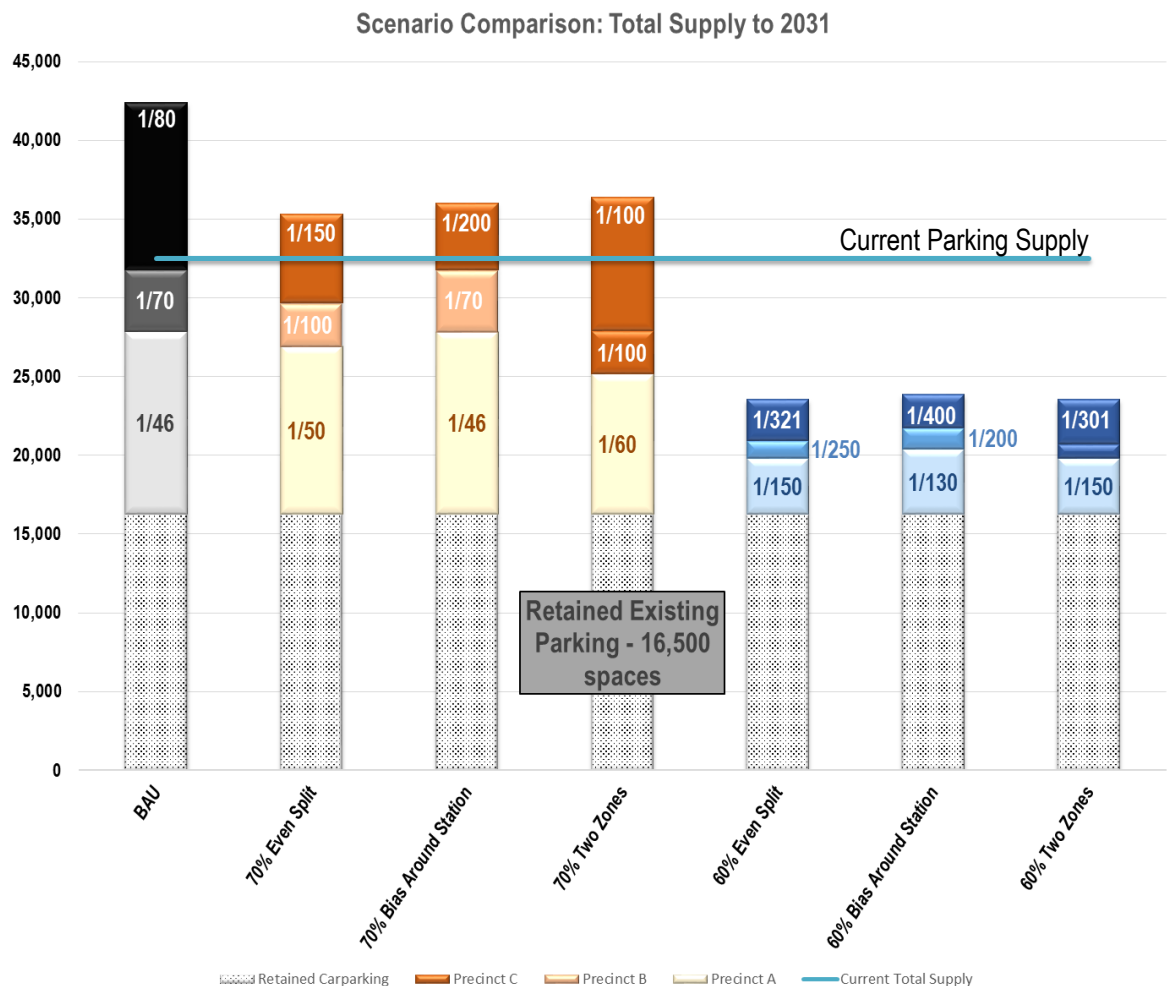
## 10.5 SCENARIO COMPARISON

The Business as Usual (BAU) case is estimated to result in an increase of total parking supply of approximately 10,000 spaces by 2031 to accompany the increase in GFA. As a result, the private vehicle mode share would experience a negligible reduction (75% to 74%) which is insufficient to generate improvements to the current and future road network performance issues and would likely worsen current congestion levels.

The two private vehicle mode share targets investigated produced a reduced total parking supply when compared to the BAU case. With an increase in GFA of approximately 1,070,000m<sup>2</sup> and redevelopment of 50% of the existing floor space, the results indicate that:

- Achieving a 70% mode share target by 2031 would require the total increase in parking supply to be limited to approximately 3,000 to 4,000 spaces. This represents a parking space growth of 1 space per 355m<sup>2</sup> of new or redeveloped floor space, approximately; and
- Achieving a 60% mode share target by 2031 would require a total decrease in current parking supply in the order of 9,000 spaces. This means that sites that are re-developed would have their parking reduced substantially and new developments/infill would have far more restrictive parking rates.

A comparison of the Business As Usual case and all other scenarios is given below in Figures 10.4 and 10.5.



**Figure 10.4: Scenario Comparison: Total Study Area Parking Supply 2031**



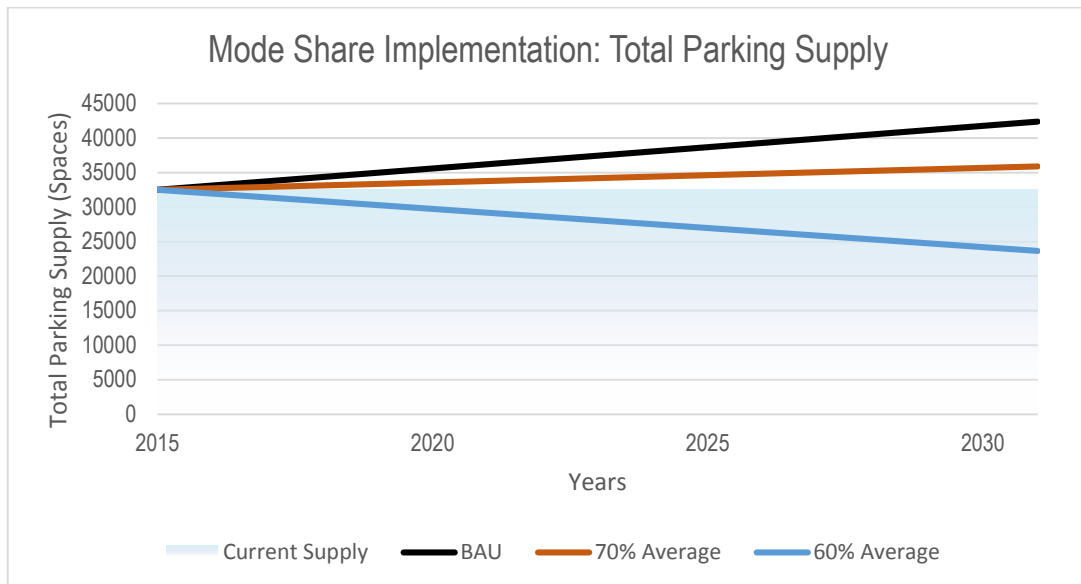


Figure 10.5: Study Area Off Street Parking Provision for each Scenario, 2015 to 2031

## 11. SCENARIO EVALUATION

### 11.1 OVERVIEW

An evaluation framework was formulated to appraise and compare the parking provision scenarios. The evaluation was based on five main criteria, as follows:

- Progress to reach the preferred mode share target of 60% by private vehicle;
- Alignment with planned building densities and areas of existing and potential public transport (PT) accessibility;
- Impacts on commercial viability of continued development and competitiveness with other centres;
- Staging and implementation of parking rate changes (e.g. in line with PT upgrades); and
- Differential impacts of using significantly different rates in adjacent precincts within Macquarie Park.

### 11.2 EVALUATION CRITERION 1: MODE SHARE TARGET

The Macquarie Park Precinct Traffic Study prepared by Bitzios Consulting in 2009 identified that a private vehicle mode share of 60% was required by 2031 to allow the road network to accommodate the anticipated trips (in addition to targeted infrastructure upgrades). This reduction in private vehicle mode share is required to address the congestion issues experienced throughout the Macquarie Park network, which have gradually deteriorated since the time that assessment was conducted and will continue to worsen if no changes are introduced.

The 60% targeted provision scenarios fulfil this criterion, while the 70% targeted scenarios do not.

### 11.3 EVALUATION CRITERION 2: ALIGNMENT WITH BUILDING DENSITIES & PT ACCESSIBILITY

Lower development parking rates are more effective and better received where alternative transport modes are reasonably accessible, or could potentially be made accessible. Public transport provision and patronage is typically higher in areas with higher employment densities. As a result, reduced parking rates are more appropriate where permissible building densities are higher under the DCP and alternative transport modes are more accessible (or where this accessibility can be improved).

This evaluation criterion addresses this factor by assessing the average densities for the areas where stricter parking rates are proposed and the opportunities to link them with current or future alternative transport mode provision.

### 11.4 EVALUATION CRITERION 3: COMMERCIAL VIABILITY AND COMPETITIVENESS

The ultimate goal of the revised parking rates under evaluation is to improve road network performance to assist continued commercial growth within the precinct. Parking availability is a particularly key commercial attraction factor for commercial space. Consequently, the implementation of substantial changes in parking provision in the area could make Macquarie Park less attractive to both the property sector and prospective tenants. This is in direct opposition to the aim and could foreseeably induce substantial stakeholder and community opposition.

Moreover, the implementation of these new parking rates is dependent on development and re-development yields, as existing parking provisions cannot be reduced if no changes to each site take place. Reducing the parking rates too aggressively could have the natural consequence of discouraging both new development and especially re-development (so that current spaces can be retained).

This criterion seeks to balance stricter mode share targets to resolve traffic congestion issues with the likelihood of discouraging development and slowing floor space turnover.

## 11.5 **EVALUATION CRITERION 4: IMPLEMENTATION/STAGING OF PARKING RATE CHANGES**

While the mode share calculations assessed the result by 2031 of implementing modified rates now, some of the scenarios evaluated would be likely to require a staged delivery to allow for a transition to take place from current rates to more constrained parking provision schemes.

This criterion evaluates both the need for this transition to be applied and the ability to do so based on the proposed rates and potential staged initiatives.

In summary, the more severe reductions implied by the 60% mode share target would be more likely to require a well-planned staged implementation to avoid development shocks or uneven development patterns. However, it is unclear how that implementation could proceed given the magnitude of the modifications typically proposed as part of the respective scenarios.

The rates aimed at a 70% mode share target could have a less complex staging strategy and (subject to further investigation and discussion with stakeholders), the transition period could even be removed. However, a staging program aligned with public / active transport improvements would be recommended and better received by stakeholders. The implementation of the North-West rail link could be used as a deadline after which the revised parking rates could be applied in full effect while until then, temporary / transition rates would be applicable.

## 11.6 **EVALUATION CRITERION 5: DIFFERENTIAL IMPACTS WITHIN MACQUARIE PARK**

Implementing multiple parking rates across the precinct with significantly different levels has the potential to result in localised impacts where adjacent sites (or sites in close proximity) have pronounced differences in the applicable parking provision.

This disparity would then result in discouraging development (and/or redevelopment) in the areas with more stringent parking rates and it wouldn't be well received by the respective land owners, which would perceive the rate allocation as unfair.

Consequently, the rates amongst the three precincts (A, B and C) would ideally achieve a balance in which:

- Further differentiation between sub-areas is introduced, encouraging public transport use where appropriate, and;
- Not being so divergent as to induce differential impacts and hinder the attractiveness of the precinct and development rate.

## 11.7 SUMMARY OF SCENARIO EVALUATION

Table 11.1: Summary of Scenario Evaluation

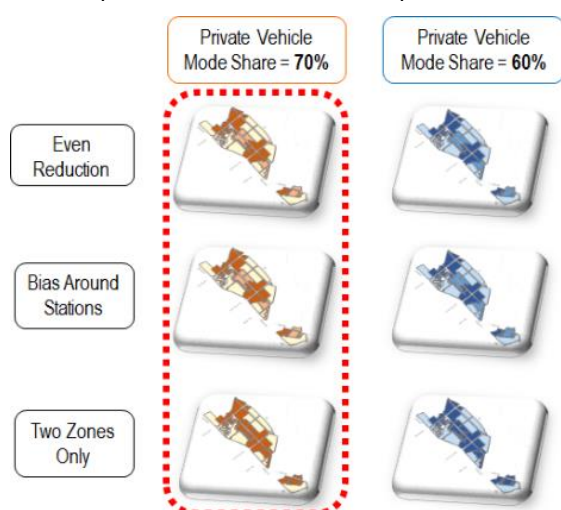
Criteria	Private Mode Share = 70%			Private Mode Share = 60%		
	Even Reduction 1/50 1/100 1/150	Bias Around Stations 1/46 1/70 1/200	Two Zones Only 1/60 1/100	Even Reduction 1/150 1/250 1/320	Bias Around Stations 1/130 1/200 1/400	Two Zones Only 1/150 1/300
Mode Share Target Achieved	No			Yes		
Alignment with Building Density and PT Accessibility Potential	Yes. However, the even reduction applied does not introduce further “differentiation” between sites based on proximity to PT services	Yes. Further “differentiation” between sites introduced based on proximity to PT services.		Yes. However, the even reduction applied does not introduce further differentiation between sites based on proximity to PT services	Yes. Further differentiation between sites is introduced based on proximity to PT services.	
Impacts on development within Macquarie Park and its competitiveness amongst other centres	This mode share target produces a modest total increase in spaces from the current 32,500 to 35,500 in 2031. This is a growth of 1 space per 355m <sup>2</sup> renewed floor space.  Redevelopment is not as severely impacted as the alternative scenario (based on a 60% target) and the precinct is still considered a viable option.			This mode share target produces a total reduction of spaces from the current 32,500 to 24,000 in 2031. This is a loss of 1 space per 125m <sup>2</sup> renewed floor space.  This is expected to substantially devalue the Macquarie Park’s proposition, undermining the viability of redevelopment and slowing the implementation of new parking provisions.		
Ability to Stage parking implementation	The proposed modifications would need a staged implementation strategy. All options are based on the hypothetical scenario of starting implementing the changes now but would benefit from a transition period aligned with public transport improvements.			The magnitude of the modifications advises a multi-stage implementation strategy. Appropriate triggers would need to be identified based on a combination of PT upgrades and other factors. However, the 2031 mode share of 60% is based on introducing changes now.		
Differential Impacts between zones.	This corresponds to the scenario with the least anticipated differential impacts given the more “even” rate distribution (three zones maintained).	This scenario aims at targeting the areas around the train stations. The scale of the proposed modifications is anticipated to result in significant “differential impacts”.	This scenario aims at converting the number of zones to two. However, the scale of the proposed modifications is anticipated to result in moderate “differential impacts”.	The magnitude of the rate’s modifications is likely to cause some differential impacts given that the “lower” rate is half of the “higher” rate.	The magnitude of the rate’s modifications is likely to cause some differential impacts given that the “higher” rate corresponds to three times the “lower” rate.	This scenario aims at converting the number of zones to two. The magnitude of the rate’s modifications is likely to cause some differential impacts given that the “lower” rate is half of the “higher” rate.

## 12. PREFERRED SCENARIO

### 12.1 PRIVATE VEHICLE MODE SHARE SELECTION

Following the scenario evaluation and feedback received from Council, it was determined that the 60% mode share scenarios involved measures considered to be too aggressive and that this could eventually affect the precinct's competitiveness and viability. Any of these scenarios would involve an overall reduction of parking supply throughout the precinct (from 32,500 to ~26,000, a 20% reduction) while floor space is expected to almost double over a 15 year period. Moreover, these parking rates could discourage new development and re-development within the study area.

The most generous parking provisions in the 60% scenario would be more stringent than Parramatta or Green Square. The inner core of the precinct would be subject to parking restrictions similar to Chatswood,



North Sydney and the CBD. Macquarie Park does not have the public / active transport amenity or "precinct profile" to compete with these centres.

The 70% private vehicle mode share target scenarios produced a more reasonable change in total supply, allowing overall parking supply to grow as floor space grows to 2031, while doing so at a much lower rate.

As such, it was determined that the preferred scenario should be derived from one of the three options investigated for the 70% private vehicle mode share target.

### 12.2 SCENARIO SELECTION

Each of the three options assessed to achieve the 70% target have different benefits / impacts. Table 11.1 summarises how each option aligns with some key evaluation criteria. In the process of selecting the "preferred option", these evaluation criteria were considered together with feedback received from Council.

As part of the scenario evaluation process, it was found that the "Bias around Stations" scenario would have the potential to discourage development in the core areas and/or introduce differential impacts for sites in close proximity to one another. This is due to the disparity in parking rates for different sub-areas, with the higher rate (1/200m<sup>2</sup>) approximately four times higher than the lower rate (1/46m<sup>2</sup>).

While the "70% private vehicle mode share" scenarios generally consist of more viable options when compared to the 60% options (as discussed in Section 12.1), it is important that the adopted scenario achieves a balanced outcome and does not include any sub-areas with parking rates that are not adequate / viable or not consistent with the remaining sub-areas.

Both the "Bias around Stations" and "Even Reduction" scenarios include parking rates beyond the 1/100m<sup>2</sup> threshold which is already considered to be a very tight parking rate based on feedback received from stakeholders. The "Two Zones Only" scenario is more lenient having the 1/100m<sup>2</sup> rate applied as a maximum to the areas in the core of the precinct (better serviced by public transport infrastructure).

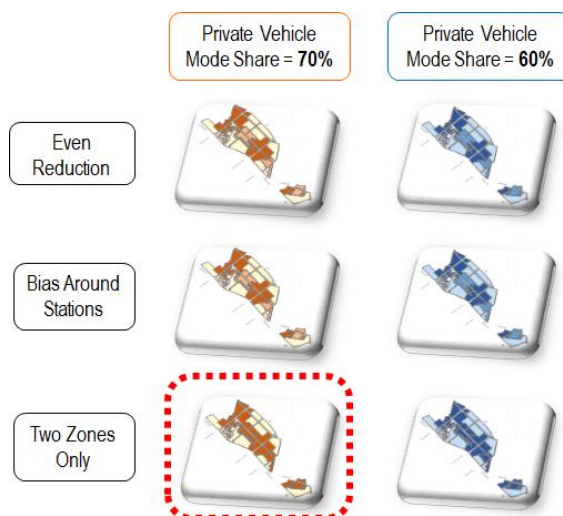
As such, the "Two Zones Only" scenario was found to allow a certain differentiation between areas with better public transport provision, namely those in close proximity to the rail stations (which was one of the key evaluation criteria) while applying parking rates that do not introduce a significant disparity between adjacent sites. More importantly, the parking rates proposed under the "Two Zones Only" scenario achieve a better overall precinct balance, avoiding a disparity in parking rates that could discourage development in certain areas. (That is, it minimises differential impacts.)



The “Even Reduction” scenario not only includes parking rates beyond  $1/100\text{m}^2$ , but also introduces potential differential impacts with the “third tier” rates ( $1/50\text{m}^2$ ) corresponding to triple of those in the core precinct ( $1/150\text{m}^2$ ).

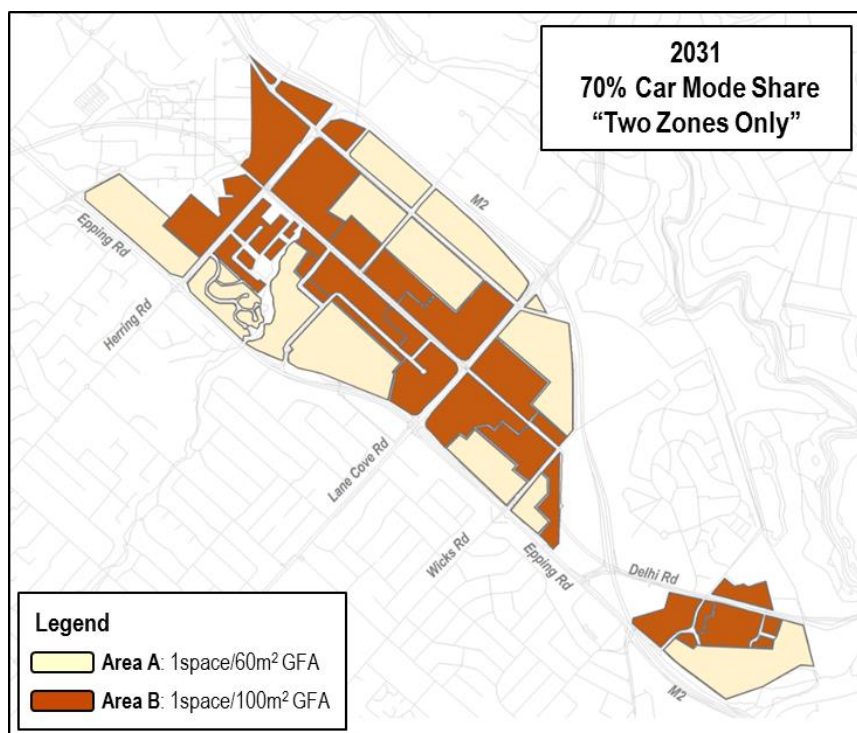
Another benefit associated with the “Two Zones Only” scenario consists of its zonal distribution generally aligning with that of the floor space ratio (FSR) maps currently being finalised by Council. This would simplify the implementation of both maps and improve consistency for different planning instruments.

Overall, the “Two Zones Only” scenario was found to be the one with higher compliance levels with the evaluation criteria. It consists of a balanced approach that minimises potential issues associated with the other two options, namely the likely differential impacts, and impacts on precinct attractiveness.



The “Two Zones Only - 70% Private Vehicle Mode Share” was therefore selected as the preferred scenario as the result of the evaluation process and consultation with Council.

This option was well received by Council representatives as part of a workshop organised to discuss the scenarios evaluated as part of this study.



**Figure 12.1: Preferred Scenario**

## 12.3 COMPETITIVENESS AND VIABILITY EVALUATION

The scenario selected achieves the best balance between minimising the effects if traffic congestion growth in the precinct and the impacts that the modified rates will cause in the precinct's competitiveness against other centres with a similar product. Both excessive traffic congestion and insufficient parking reduce the competitiveness of centres like Macquarie Park. However, expectations change over time as the types of businesses in evolving centres also change, with less of a reliance on car usage and parking and a greater reliance on public transport access, like key business centres further to the east such as Chatswood. The rate of transition is the key and striking the right balance at the right time between reducing private car usage and discouraging the leasing of commercial space in the area (and hence discouraging re-development) due to insufficient parking being available.

It must be noted that, at this point in time in a highly competitive commercial space market, parking availability is very important for Macquarie Park and other comparable centres. The proposed changes to commercial and industrial parking rates will inevitably (marginally) affect the attractiveness of some sites, but this is not expected to be to an extent that will encourage tenants / developers to relocate to alternative locations on masse, or to discourage redevelopment. While the proposed parking rates will be more restrictive to those currently applied to other centres (such as Norwest or Rhodes), it is important to understand Macquarie Park in the context of the second biggest business centre in the Sydney region with a substantial number of trips to/from the precinct on a daily basis.

For example, a parking rate of 1space/40m<sup>2</sup> is currently applied to Rhodes. However, this refers to a much smaller centre (approximately 1km<sup>2</sup>). It attracts approximately 25% of the trips compared to Macquarie Park. It also contains a significantly higher proportion of residential land use, therefore contributing to a different split of in/out trips.

Macquarie Park is also unique in the availability of large floor plates, its central location, quality of infrastructure, current/future residential catchment, etc. These attributes have some intrinsic value that offsets to some extent any perceived impacts due to reduced parking availability for certain types of businesses. Moreover, other centres are likely to have their parking rates revised and adjusted over the upcoming years which will inevitably reduce the parking rate differences between Macquarie Park and its competitors. In some way, local government regulates its DC parking rates compares to what other centres are doing and it is likely that Macquarie Park DCP rates will be used as a benchmark for similar business parks elsewhere in the future.

It will be important though to maintain enough parking within the proposed rates to cater for parking spaces demanded by middle and upper management, whilst encouraging a shift in lower level employees from car-based to public transport and active transport-based access. The proposed rates strike this balance and allow sufficient on-site parking for salary packages that need to include a vehicle and a car space.

The challenge for Macquarie Park is to ensure that it is future proof and that the redevelopment rate is not reduced. This can only be achieved with a combination of improved traffic network operations (to which a modified mode share is crucial), improved public transport service and an increased residential catchment. The proposed scheme takes this in consideration and allows the implementation of a "period of adjustment" (see Section 14.2) to ensure that the transition is gradual and has minimal impacts on the precinct's competitiveness.

### 13. FINAL DRAFT PARKING RATES

Following consultation with Council, it was noted that the preferred scenario of two parking rate zones for Macquarie Park consisted of a zonal distribution very similar to that of the floor space ratio (FSR) maps currently being finalised by Council. It is understood that these maps and associated requirements are intended to come into effect in the near future.

It was subsequently agreed that it would be logical for the parking rates maps to be consistent with the other maps being prepared by Council. Moreover, the current parking rate zone definitions include some locations with more than one rate applying to different parts of the same site. As such, there would be additional benefits in applying to required adjustments to the preferred rate distribution show in Figure 12.1 and use the opportunity to update the parking rates to remove these inconsistencies.

In the overall context of the precinct and estimated mode share calculations, the differences between the “preferred rate map” show in Figure 12.1 and that including the modifications required to allow it to match the FSR maps are small enough that they wouldn’t have a tangible impact on the mode share calculations.

Figure 13.1 illustrates the “Draft Final” parking rate areas. The guiding principles and benefits associated with this adjustment in the mapping are summarised below:

- Existing 1space/46m<sup>2</sup> areas will generally move to 1space/60m<sup>2</sup>;
- Existing 1space/70m<sup>2</sup> and 1/80m<sup>2</sup> areas will generally move to 1space/100m<sup>2</sup>;
- Areas with FSRs between 0.5:1 and 2.0:1 on the Draft Macquarie Park Incentive FSR map will generally equate to 1space/60m<sup>2</sup> areas;
- Areas with FSRs between 2.5:1 and 3:1 on the Draft Macquarie Park Incentive FSR map will generally equate to 1space/100m<sup>2</sup> areas;
- Only one car parking rate will apply to each site (the exception to this is the Johnson & Johnson site which will have a split parking rate for historic reasons); and
- No sites will move from 1space/46m<sup>2</sup> to 1space/100m<sup>2</sup>, unless the current car parking rate is split across a site and a portion of the site has an FSR of 2.5:1 or more

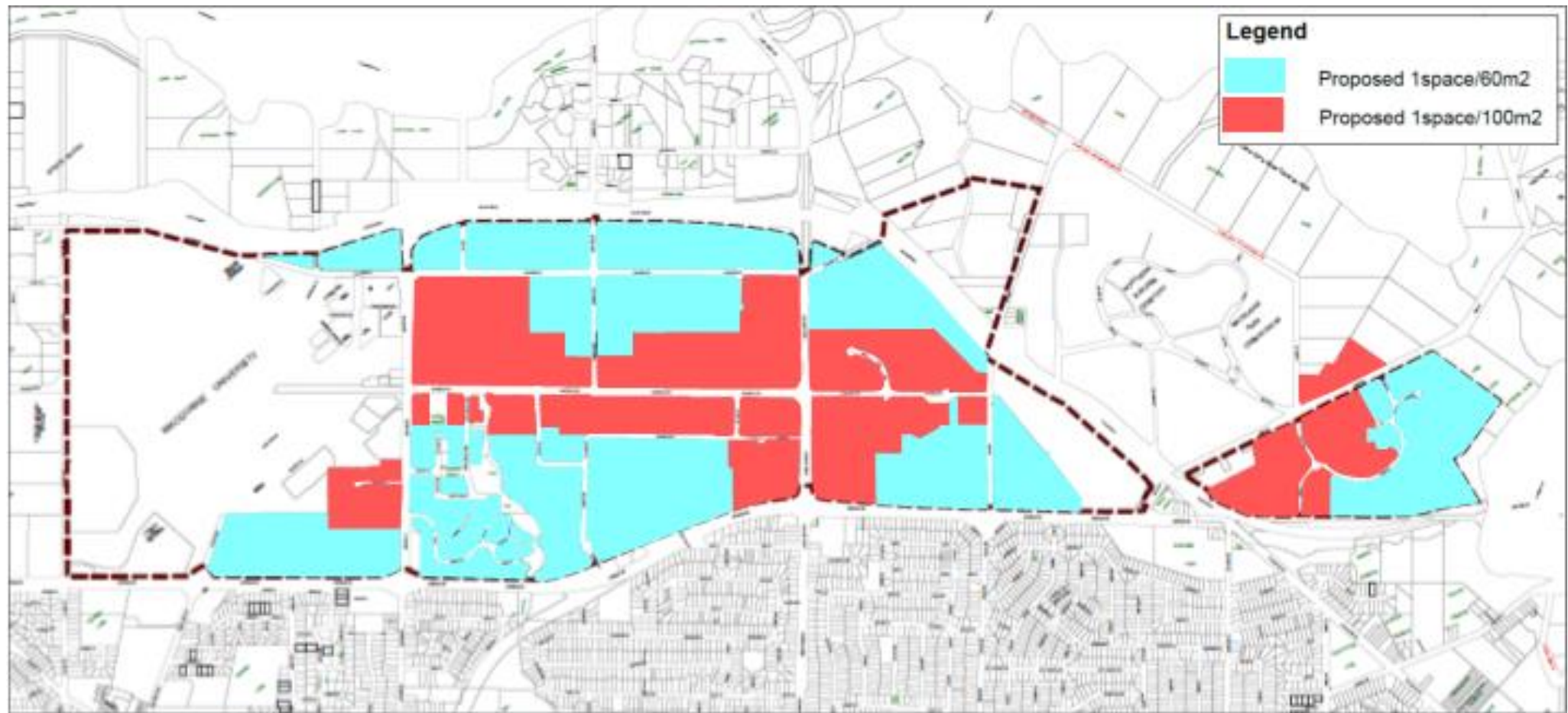


Figure 13.1: Final Draft Parking Rates Map



## 14. CONCLUSIONS AND RECOMMENDED IMPLEMENTATION STRATEGY

### 14.1 CONCLUSIONS

The analysis of the current situation and investigations of potential modifications to current parking rates resulted in the following key findings:

- Macquarie Park has diversified from its original light industrial, technology and research focus into more of a general office and “corporate headquarters” area;
- The current parking provision is estimated to correspond to virtually one space per employee which contributes to congestion issues throughout the precinct;
- The current private vehicle mode share is 75% (compared to the 60% target for 2031 identified in previous studies to try and manage the impacts of congestion growth);
- The precinct has experienced significant growth in recent years and is expected to continue its redevelopment and diversification with forecasts of it doubling its number of employees by 2031. University and residential components are also set to increase by 2031;
- The number of University students and amount of Residential dwellings is also set to increase markedly by 2031;
- The current parking rates applicable under the DCP for commercial and industrial development are divided into three areas predominantly based on proximity to train stations, as follows:
  - 1 space / 46m<sup>2</sup> Gross Floor Area, in Area A;
  - 1 space / 70m<sup>2</sup> Gross Floor Area, in Area B; and
  - 1 space / 80m<sup>2</sup> Gross Floor Area, in Area C (within 400m of a rail station).
- When compared with other relevant business centres in Sydney, Macquarie Park exhibits one of the highest private vehicle mode shares and some of the most generous parking rates;
- The key issue for changing parking rates in Macquarie Park appears to be the rate of transition over time related to how quickly public transport services can be added to provide a practical, attractive alternative;
- Under “Do Nothing” (that is, maintaining the current development parking rates) the total parking supply in the study area would increase by approximately 10,000 spaces by 2031. As a result, the private vehicle usage would inevitably exacerbate current congestion issues;
- The two private vehicle mode share targets investigated (70% and 60%) produced a reduced total parking supply when compared to the do nothing approach. With an assumed increase in GFA of up to 1,070,000m<sup>2</sup> and an assumed redevelopment of 50% of the existing floor space, the results indicate that:
  - Achieving a 70% private vehicle mode share target by 2031 would require a total increase in parking supply in the order of 3,000 to 4,000 spaces from current supply. This represents a parking space growth of 1 space per 355m<sup>2</sup> of new or redeveloped floor space; and
  - Achieving a 60% private vehicle mode share target by 2031 would require a total decrease in parking supply in the order of 9,000 spaces from current supply. This represents a parking space reduction of 1 space per 125m<sup>2</sup> of new or renewed floor space, approximately. In effect, this means that any removed parking spaces due to redevelopment would be replaced with far fewer spaces even though floor space may have increased.
- Following the scenario evaluation and feedback received from Council, it was determined that the 60% private vehicle mode share scenarios involved measures considered to be too aggressive and that this could eventually adversely affect the precinct’s competitiveness and viability;
- The 70% private vehicle mode share target scenarios produced a more reasonable change in total supply, allowing overall parking supply to grow as floor space grows to 2031, while doing so at a much lower rate;
- Three scenarios were evaluated to help achieve the 70% private vehicle mode share target by 2031 (“Even reduction of parking rates throughout the precinct”, “Bias around stations” and “Two Zones Only”). The outcome of the evaluation process and consultation with Council was that the preferred scenario was the “Two Zones Only – 70% Private Vehicle Mode Share” for the following reasons:
  - It allows a certain differentiation between areas with better public transport provision (namely those in close proximity to the rail station);



- The differentiation introduced is not as aggressive as “Bias Around Stations” scenario, which would have the higher rate approximately four times higher than the lower rate, therefore having the potential to discourage development in the core areas and/or introduce differential impacts for sites in close proximity to one another;
- Spatially, it is aligned with Council’s “Floor Space Ratios Map” for Macquarie Park which would simplify the implementation and improve consistency for different planning instruments; and
- The proposed scheme does not include any sectors with rates above 1/100 (i.e. the changes are not as pronounced when compared with other scenarios which include sections with rates of 1/150 or 1/200);

## 14.2 IMPLEMENTATION CONSIDERATIONS

While the mode share estimations and scenarios evaluation were based on introducing the new rates now and maintaining them until 2031, the proposed strategy would benefit from having a transition / staging program to assist in gradually delivering the modified parking rates. It is also logical to combine the full implementation of the revised parking rates with improvements to the public transport service in the area, so that workers who decide to make the transition from private vehicle have an attractive, viable alternative in public transport. This will help in gaining support from the community and stakeholders.

The implementation of the North West Rail Link (with completion estimated by early 2019) will constitute a significant improvement to public transport service in the area. Not only will it directly connect Macquarie Park with residential catchments to the west of Epping, but it will also increase train frequency in the Epping to Chatswood Rail Link (claimed to be converted to “one train every four minutes during the peak periods”). This upgrade is a logical trigger after which the modified parking rates could be made fully operational. Until then, a transition period could be applied in which the new rates would only apply to “new development”. Any re-development would be allowed to maintain current parking supply (that is, where the new rates would result in a reduction of parking spaces, this would be waived so that current supply could be kept).

A staged implementation also allows other initiatives to be planned and delivered such as bus service improvements and walking / cycling facilities, which would assist in achieving a successful balance of different mode shares while overall parking provision is reduced (in proportion to the overall floor area).

## 14.3 RECOMMENDED IMPLEMENTATION PROGRAM

The proposed implementation strategy (with indicative dates/timings) is summarised in Table 14.1.

**Table 14.1: Indicative Implementation Strategy**

Indicative Date	Action
2015	<ul style="list-style-type: none"> <li>▪ Seek community comment through the planning controls review process.</li> <li>▪ For the purpose of this implementation strategy, it is assumed that Council will adopt the planning controls following exhibition.</li> </ul>
2016	<ul style="list-style-type: none"> <li>▪ Apply the revised parking rates to “new developments” (i.e.: “Two Zones” at 1/60 &amp; 1/100) through the DA process;</li> <li>▪ Re-development would have the new rates waived if these resulted in a reduction of current parking supply.</li> </ul>
2016-2019	<ul style="list-style-type: none"> <li>▪ Investigate and implement measures that can assist modal shift such as improved bus services / bus priority, improved walking and cycling facilities, etc.</li> </ul>
2019	<ul style="list-style-type: none"> <li>▪ Apply the revised rates to re-development as well as new developments (i.e.: “Two Zones” at 1/60 &amp; 1/100);</li> <li>▪ This would coincide with the delivery of the North West Rail Link and improved frequency along the Chatswood – Epping Rail line.</li> </ul>
2020	<ul style="list-style-type: none"> <li>▪ Undertake a review of commercial off-street parking rates and evaluate the outcomes of the 2015 – 2020 period.</li> </ul>

## APPENDIX A

### STAKEHOLDER CONSULTATION NOTES





## MEETING MINUTES

22 December 2014

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation - <b>Jones Lang LaSalle</b>
<b>Attendees:</b>	Denys Bizinger (DB) – Jones Lang LaSalle (JLL) John Brown (JB) – City of Ryde (CoR) Alan Finlay (AF) – Bitzios Consulting (BC) Ivo Pais (IP) – Bitzios Consulting (BC)
<b>Location:</b>	Level 27 North Point 100 Miller St North Sydney
<b>Date and Time:</b>	19 December 2014

### Minutes:

- JB provided an overview of the study background / purpose and informed that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the meeting purpose was;
- AF asked DB “what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive”;
- DB described some a few factors such as:
  - Value for money – brand new buildings compared to other centres;
  - Large floor plates / developable sites available – business consolidation opportunities;
  - Location;
  - Competing businesses want to be “where their competitors are”. Networking opportunities are present. “They like being there”;
- DB mentioned how “Parking availability is of key importance” in MP;
- This is of particular importance for businesses moving within the precinct;
- Development applications with poor parking ratios are not competitive;
- Older development applications with higher parking ratios are preferred by tenants / businesses;
- There is currently a lot of interest in the fringe areas with a parking rate of 1space/46spm (higher applicable rate in the precinct);
- Sites within the “1space/80sqm buffer” simply won’t lease;
- Parking is involved in every deal;
- The current rail provision is not adequate and/or not servicing the right locations. A lot of people come from the north / west. It is not convenient for a large proportion of the MP workforce;
- North West Rail Link will have some positive effect;
- Car share scheme are not appealing;
- JB mentioned an example of someone working in MP and commuting from the North Shore. Public transport is not a practical solution;
- Some buildings have shuttle services in place to provide connections to the rail stations. These seem to work relatively well;
- Businesses / tenants have high expectations towards parking provision. If multiple options/sites are presented, they will typically choose that with higher parking provision;
- JB explained that traffic congestion is not seen as an issue as bad as parking. Some sites have privileged location to avoid congestion hotspots (“pole position” factor);
- People tend to accept that congestion “is everywhere you go in Sydney”. Some improvements occurred recently (M2 upgrade, new ramps, etc.);
- JB mentioned how property inspections are typically conducted before 10am and after 3pm to avoid the worst parking/congestion periods;

- JB questioned if employees would consider the option of a higher salary as a trade-off for the loss of a car spot. DB answered that it is hard to know but that he suspects that most people wouldn't see this as an attractive incentive;
- DB mentioned that competing precincts would be Rhodes, Norwest and Olympic Park;
- DB referred to the large number of sales staff working in the precinct and to the fact that they need cars. Some sites operate with "hot desking parking spots" and valet parking for larger car parks;
- JB questioned if the provision of off-street parking station(s) would be considered as a positive solution;
- DB informed that businesses would likely be opposed to such a scheme and that its implementation could be problematic, especially in relation to possible levies, S94 contributions, etc.;
- JLL is gradually pushing some parking limitations with new leases and alerting businesses to the issue. However, this has to be a slow process;
- DB referred to the example of a potential "1space/100sqm" rate for a large site (15,000sqm or larger) and how it wouldn't work for a long term lease. It would be extremely difficult to obtain a "pre-commitment";
- The university has a positive impact in the precinct especially when it collaborates with local businesses;
- As a final note, DB mentioned that further reducing current parking rates would be extremely courageous and could have some serious consequences.

## MEETING MINUTES

16 January 2015

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation - <b>Stockland</b>
<b>Attendees:</b>	Simon Botterill (SB) – Stockland Alan Finlay (AF) – Bitzios Consulting (BC)
<b>Location:</b>	Telephone conversation
<b>Date and Time:</b>	14 January 2015

### Minutes:

#### Background/introduction

- AF provided an overview of the study background / purpose and informed that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the meeting purpose was.

#### Macquarie Park's Competitive Advantage

- AF asked SB "what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive";
- SB described some factors such as:
  - Value for money – lower development costs compared to CBD and North Sydney;
  - Good train links;
  - Flexibility to increase FSR on existing plots;
  - Large floor plates / developable sites available – potential for combining offices with laboratories and workshops;
  - Location – still quite close to CBD;
- SB thinks this unlikely to change over next 10 years

#### Congestion Issues

- SB mentioned congestion issues in the North Ryde end of the precinct, i.e. around Delhi Road and M2 access points. He thinks it is not so bad in MP itself.
- SB mentioned how parking availability is still a big plus for MP;

#### Future doubling of workforce?

- SB thinks the 'drive to work' paradigm must change but viable alternatives must be in place first.

#### Doubling of Congestion Levels?

- SB thinks MP should still be competitive on a price basis for companies that require large spaces.

#### Adequacy of Existing Public Transport?

- SB thinks the train service is adequate in peak periods but off-peak frequency (15 minutes) is not good enough. He will catch a taxi from MP to city rather than wait for next train ("my time is too valuable").
- SB has never used the bus service and so feels unable to comment.



- Public transport adequacy is dependent on employee residential location – not good for northern beaches, for example.

### **Current Parking Rates**

- SB thinks not enough in terms of what tenants want or expect.
- There is always demand for short term parking at other sites, and some 'swaps' or cross leasing occurs.
- Existing ratios OK until such time a better public transport alternatives are available.

### **Dependency of Businesses on Parking for Staff and Visitors**

- Strongly dependent for staff
- Visitor parking depends on type of business – e.g. if meetings or presentations are required

### **Could More Restrictive Parking Rates be Applied over Time?**

- SB thinks we would need to have practical alternatives in place and be able to demonstrate that these alternative actually work, in both time and cost terms.
- Thinks Green Travel Plans are OK but they need to get buy-in and to demonstrate effectiveness and efficiency.

## MEETING MINUTES

16 January 2015

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation - <b>Goodman</b>
<b>Attendees:</b>	Will Dwyer (WD) – Goodman Alan Finlay (AF) – Bitzios Consulting (BC) Ivo Pais (IP) - Bitzios Consulting (BC)
<b>Location:</b>	Goodman offices Level 17, 60 Castlereagh Street, Sydney
<b>Date and Time:</b>	15 January 2015

### Minutes:

#### Background/introduction

- AF provided an overview of the study background / purpose and informed that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the meeting purpose was.

#### Macquarie Park's Competitive Advantage

- AF asked WD "what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive";
- WD described some factors such as:
  - Value for money – good price point for rents;
  - Plenty of future capacity;
  - Location – still quite close to CBD, compared to NorWest, Rhodes and Homebush. Attractive to CEOs and senior management who are more likely to live in the north and east.
  - Some level of "social infrastructure" in place compared to other centres and a development density that is gradually intensifying;
- WD thinks this could change slightly over next 10 years, given the redevelopment of South Sydney precinct (Green Square, Alexandria and Mascot). This precinct is close to CBD, eastern suburbs and airport.
- WD believes that Macquarie Park is more "rigid" in terms of land use allocation and development type when compared to this upcoming precinct. Competition is likely to intensify between the two precincts within the next 12 months.

#### Congestion Issues

- WD thinks that congestion has long been an issue, but MP is on a par with other parts of Sydney;
- There is still too much uncertainty about the future road network within MP and better planning is required to address this and achieve better "precinct activation";
- Homogeneous zoning tends to increase congestion (e.g. all trips is same direction);
- WD thinks parking availability is still the number one criterion for businesses in MP – 1:40 zones are most attractive, and the 1:80 target causes problems.

### **Future doubling of workforce?**

- WD thinks the North West Rail Link (metro to Rouse Hill) will improve accessibility, but it will also lead to increased completion from other future business parks on that line (e.g. NorWest, Cherrybrook?).
- WD also thinks the proposed Parramatta to MP light rail line could be helpful;
- He thinks we need more flexibility in land use – more mixed use – to allow higher percentages of walking and cycling to work trips. This will also contribute to a better balance in trip directionality (i.e. trips generated by residential land uses will typically go in the opposite direction of those generated by employment sites)

### **Doubling of Congestion Levels?**

- WD thinks congestion not really the issue – rents are holding up.

### **Adequacy of Existing Public Transport?**

- WD has not used either train or bus services to MP so can't really comment.
- He thinks the train stations are too far away from some businesses, and so a shuttle bus could be useful (the system that Optus has currently in place was mentioned as a good example).
- WD mentioned the issue of personal security for women walking to train stations after dark (in winter months). Suggested that 800m is too far to be a realistic catchment in such situations. Street activation (that should result from zoning changes) would also be helpful for personal security / passive surveillance.

### **Current Parking Rates**

- WD acknowledged the rational for change, but thinks 1:100 is not appropriate for Ryde.
- He re-iterated how 1:80 is already problematic / not competitive.
- There is still lots of demand for parking;
- He supports differential rates for proximity to rail stations, but they need to be "realistic".

### **Dependency of Businesses on Parking for Staff and Visitors**

- Strongly dependent for staff.
- Visitor parking depends on type of business – e.g. if meetings or presentations are required, or if the business has a showroom.
- WD mentioned that there could be some cases in which staff choose to drive because they are not aware of the public transport alternatives and how competitive these are in comparison. Awareness programs could be helpful but tangible benefits wouldn't be expected. "Incentive schemes" would probably be more effective.

### **Could More Restrictive Parking Rates be Applied over Time?**

- WD thinks there would need to be a strong connection between improved public transport and more restrictive rates.
- There needs to be a study to generate evidence of employee residential locations.
- WD thinks Green Travel Plans unlikely to be very effective.

## MEETING MINUTES

6 February 2015

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation – <b>AMP Capital</b>
<b>Attendees:</b>	Jeff Peers (JP) – AMP Capital Alan Finlay (AF) – Bitzios Consulting (BC)
<b>Location:</b>	Telephone conversation
<b>Date and Time:</b>	16 January 2015

### Minutes:

#### Background/introduction

- AF provided an overview of the study background / purpose and informed that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the conversation purpose was.

#### Macquarie Park's Competitive Advantage

- AF asked JP "what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive";
- JP described some factors such as:
  - Highly successful business park;
  - Synergies from other businesses;
  - Location – still quite close to CBD, and adjacent to highly skilled workforces;
  - Good transport connections;
  - Good educational and retail facilities.
- JP expects it to strengthen over next 10 years residential developments will provide more skilled workers and the NW rail link will help.

#### Congestion Issues

- JP thinks that congestion is an issue in some areas;
- It can affect employees in deciding to work in MP;
- Even though public transport is good, it is still nothing like the CBD;
- JP thinks parking will be important.

#### Future doubling of workforce?

- JP thinks the North West Rail Link (metro to Rouse Hill) will improve accessibility, but there will also need to be improvements in bus services and an expanded bus interchange
- JP also thinks the proposed Parramatta to MP light rail line could be helpful;
- JP would also like to see an expansion of the Transit Ways (T-way) system.

#### Doubling of Congestion Levels?

- JP thinks there would be serious problems – both for workers/businesses and for university and shopping centre – competing centres would benefit.
-

### **Adequacy of Existing Public Transport?**

- JP said he is not an expert in this area, but felt that improved bus services and light rail should be pursued

### **Current Parking Rates**

- JP thinks commercial/office rates are acceptable
- Residential parking rates could be a problem – too restrictive and ignore the fact that most people will want to own a car – unrealistic for one bedroom apartment to have no car space
- Overall, he thinks the current parking rates are about right.

### **Dependency of Businesses on Parking for Staff and Visitors**

- JP thinks very important for both;
- He is aware that some tenants are “actively managing” their own parking;
- Proximity to stations is important.

### **Could More Restrictive Parking Rates be Applied over Time?**

- JP thinks there would need to be a strong connection between improved public transport and more restrictive rates.
- He thinks it is unrealistic to force people onto public transport.



## MEETING MINUTES

6 February 2015

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation – <b>SingTel Optus</b>
<b>Attendees:</b>	Andrew Parker (AP) – Optus Alan Finlay (AF) – Bitzios Consulting (BC)
<b>Location:</b>	Telephone conversation
<b>Date and Time:</b>	16 January 2015

### Minutes:

#### Background/introduction

- AF provided an overview of the study background / purpose and informed that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the conversation purpose was.

#### Macquarie Park's Competitive Advantage

- AF asked AP "what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive";
- AP described some factors such as:
  - Larger plot sizes available;
  - Synergies from other technology businesses;
  - Relatively lower rents
- AP expects strong growth over next 10 years.

#### Congestion Issues

- AP thinks that congestion adversely affects MP's attractiveness;
- Congestion has caused some businesses to move out;
- For Optus, the advantages (in cost) outweigh the congestion issues for employees;
- Parking is important but there are alternatives, as shown by Optus;
- AP has noted that "old style" real estate agents are still trying to sell parking as a positive – he feels this has to change;

#### Future doubling of workforce?

- AP thinks there needs to be a shift to public transport, and that this will require a combined effort by Council and landholders;
- Council needs to enforce the parking rates;
- Landowners need to change their outlook to NOT expect free parking;
- Council should review the on-street parking fees – some sections are parked out all day (rates too low?), while other have no demand;
- AP thinks \$11 for 12 hours parking is too cheap;
- AP thinks there needs to be a better mix of parking restrictions (e.g. some 2P, taxi zones, etc);
- There needs to be higher parking turnover.

### **Doubling of Congestion Levels?**

- AP thinks there would be serious problems – congestion would harm MP's competitiveness
- Traffic and transport issues are in the top two or three issues for tenants;

### **Adequacy of Existing Public Transport?**

- AP thinks the current public transport is "moderate";
- The network is not designed for commuting – rather for shoppers, students, and locals;
- AP thinks there is significant demand for **express** bus and train services between Parramatta and MP;
- AP thinks the current services will not attract new businesses;
- There is not enough Bus Priority;
- As an example, he claimed the 619 and 611 bus services were "packed from day one";
- AP thinks that NW Rail Link will be positive for MP – does not believe there are any negatives in terms of competition from other centres.

### **Current Parking Rates**

- AP thinks the current (latest) parking rates are OK for on-site parking – they make sense in relation to proximity to rail stations;
- He thinks the ratios will need to tighten over time;
- AP noted that on-street parking is already full – there needs to be some re-zoning;
- AP noted that Optus charges its employees more for off-street parking than Council does for on-street parking. As a result, Optus has some empty parking spaces.

### **Dependency of Businesses on Parking for Staff and Visitors**

- AP thinks this depends on where businesses are located;
- Customer parking is critical for some businesses, but currently employees are favoured over visitors.

### **Could More Restrictive Parking Rates be Applied over Time?**

- AP thinks there could be more restrictive rates over time;
- The key factor would be improved bus services, designed for commuters (e.g. express and limited stop services). An example would be Strathfield <-> MP express service with Bus Priority.
- AP thinks Council needs to be more imaginative about how parking changes would impact residents, including how resident parking schemes could work.

## MEETING MINUTES

6 February 2015

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation – <b>Macquarie Park Transport Management Association (MPTMA)</b>
<b>Attendees:</b>	Rebecca Lehman (RL) – MPTMA Alan Finlay (AF) – Bitzios Consulting (BC)
<b>Location:</b>	Telephone conversation
<b>Date and Time:</b>	27 January 2015

### Minutes:

#### Background/introduction

- AF provided an overview of the study background / purpose and informed that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the conversation purpose was.

#### Macquarie Park's Competitive Advantage

- AF asked RL "what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive";
- RL described some factors such as:
  - Business agglomeration;
  - Synergies from other technology businesses;
- RL expects more residential development and mixed use, i.e. a better activity centre, over the next 10 years.

#### Congestion Issues

- RL thinks that congestion adversely affects MP's attractiveness;
- Congestion is the "number one issue" in MP;
- 48/50 survey respondents said it is the number issue and that it directly offsets benefits of being in MP

#### Future doubling of workforce?

- RL thinks there needs to be a shift to public transport, and reduced reliance on driving
- This will require a combined effort by Council and landholders;
- Council needs to enforce the parking rates;
- RL thinks there should be a NSW Government parking levy in a similar way to other business centres (CBD, North Sydney, Chatswood);
- There need to be much better bus services

#### Doubling of Congestion Levels?

- RL thinks congestion can't double – it is already at Level of Service F!

### **Adequacy of Existing Public Transport?**

- RL thinks the current public transport is “inadequate”;
- Lack of Bus Priority – both in Bus Lanes and traffic signals operation;
- No discernible benefit for bus passengers, so why would they get out of their comfortable cars?
- No coherent service plan;
- Poor bus frequency on some routes, and span of services don’t match employee needs (e.g. shift change times);
- RL pointed out that Forest Coach Lines buses are still not air conditioned;
- RL thinks that NW Rail Link will be positive for MP but not “save the situation”

### **Current Parking Rates**

- RL thinks the current (latest) parking rates are OK for on-site parking, but the pricing (i.e. free) is wrong;
- MP rates reflect other centres but staff get free parking;
- RL thinks that on-street parking is too cheap – this prevents visitors finding spaces;
- Off-street parking requires better management (e.g. Goodman fails to enforce issues like double parking and parking in aisles);
- On- street parking should be rationalised by reducing the number of 12P spaces and use it for other purposes (e.g. bus layover or taxi zones);
- RL notes that employees regularly leave workplaces during working hours in order to move cars around in 4P Resident Parking zones;
- RL thinks the Resident Parking Schemes are essential to keep residents on side.

### **Dependency of Businesses on Parking for Staff and Visitors**

- RL thinks there needs to be some parking for staff, especially for those where public transport is non-viable;
- Businesses complain about insufficient parking, but if they go anywhere else there are more severe restrictions on parking – not the same as in MP;
- Customer and visitor parking is essential but poorly understood – staff are parking in the Visitor spaces and businesses don’t enforce it.

### **Could More Restrictive Parking Rates be Applied over Time?**

- RL thinks there could be more restrictive rates over time, but this would depend on prior improvements in public transport, mainly buses;
- RL said there needs to be better management of on-street spaces by both RMS and Council. The example of on-street parking between Clearway times on Lane Cove Road was cited as an issue that RMS must address.

### **General suggestions**

- MPTMA would like to see as an outcome of this study a recommended value (charge) for staff parking (e.g. \$140 per month, with perhaps a discount for car pooling);
- On Mona Vale Road/Ryde Road/Lane Cove Road, there should be Clearways and Bus Priority treatments

- MPTMA supports the proposed Parramatta <-> Macquarie Park Light Rail line, but suggests it should first be piloted as an express bus service to prove the concept;
- RL thinks Green Travel Plans help address the 'ignorance of alternatives' issue, but authorities need to also fix the 'poor experience' problem (i.e. bus stuck in traffic – same as the car).



## MEETING MINUTES

25 February 2015

<b>Project No. and Title:</b>	P1878 – Macquarie Park Parking Review
<b>Overview:</b>	Stakeholder Consultation – <b>Macquarie University (MU)</b>
<b>Attendees:</b>	Cameron Kline (CK) – MU Alan Finlay (AF) – Bitzios Consulting (BC)
<b>Location:</b>	Telephone conversation
<b>Date and Time:</b>	12 February 2015

### Minutes:

#### Background/introduction

- AF provided an overview of the study background / purpose and informed CK that BC has been engaged by CoR to prepare this study;
- AF provided further information about the study and described what the conversation purpose was.

#### Macquarie Park's Competitive Advantage

- AF asked CK "what attracts development to Macquarie Park (MP) as opposed to other centres and what makes it competitive";
- CK described some factors such as:
  - Well connected to M2, Epping – Chatswood rail line, bus interchange;
  - University and shopping centre together;
  - Cheaper than Sydney and North Sydney;
  - Better located than Homebush and Parramatta;
  - Good interplay between technology/medical/university;
  - 'Back of house' operations for bigger companies (e.g. banking)
- Over the next 10 years CK expects growth in medical, but the rest much as is; perhaps more 'back of house' operations.

#### Congestion Issues

- CK thinks that congestion is definitely an issue for prospective tenants;
- It is especially bad on Lane Cove Road/Ryde Road;
- Parking is quite an important factor, and CK believes some tenants would possibly trade off rents vs parking vs congestion.

#### Future doubling of workforce?

- CK thinks the NW rail link will be important, as will the improved bus transport interchange
- He also mentioned a possible grade separation roadway to remove North-South through traffic from Lane Cove Road within Macquarie Park. (AF suggested that the most likely solution in this regard would be a tunnel from around Coxs Road to around Fontenoy Road, because all major East-West roads would need to be bypassed.)

#### Doubling of Congestion Levels?

- CK thinks congestion can't double – it must be addressed. He suggested there need to be more short, local trips.

### **Adequacy of Existing Public Transport?**

- CK thinks the current public transport is “reasonable”;
- Important to improve the bus interchange;
- CK not sure about Bus Priority measures;
- (after prompting) CK thought that the Parramatta to MP Light Rail could be helpful.

### **Current Parking Rates**

- CK thinks the current (latest) parking rates are probably appropriate; more parking provision would be problematic;
- He thinks that the parking may be too generous, given the projected growth;
- CK mentioned the 1/80 sqm rate for the University’s Concept Plan;
- CK noted that the university currently has around 5500 spaces.

### **Dependency of Businesses on Parking for Staff and Visitors**

- CK thinks that parking is real issue for businesses moving into MP;
- Visitor parking spots are very important.

### **Could More Restrictive Parking Rates be Applied over Time?**

- CK thinks there could be more restrictive rates over time; makes sense for changing mode share in favour of public transport;
- CK said that MU has been trying to encourage more public transport use through education and information availability;
- He again mentioned the improved bus interchange as an important factor in the introduction of more restrictive parking rates.



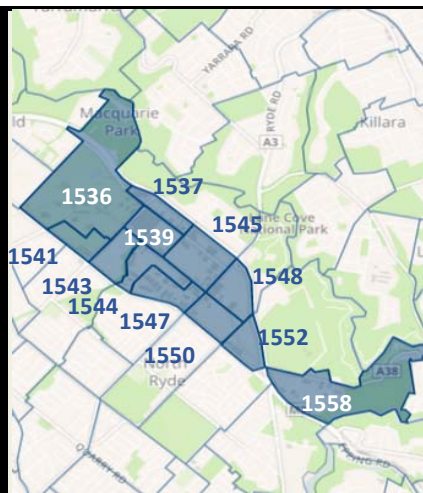
## APPENDIX B

### JOURNEY TO WORK DATA FOR COMPARABLE CENTRES





MACQUARIE PARK											
IN											
Mode	Vehicle driver	Vehicle passenger	Train	Bus	Ferry / Tram	Other mode	Walked only	Mode not stated	At Home or Did not Work	Total	Total Worked
Trips	30917	1861	6303	2652	0	699	890	489			43799
Mode %	71%	4%	14%	6%	0%	2%	2%	1%			
Vehicle Occupancy											
OUT											
Trips	358	27	280	96	0	13	265	6			1048
Mode %	34%	3%	27%	9%	0%	1%	25%	1%			
Vehicle Occupancy											
TOTAL											
Trips	31275	1888	6583	2748	0	712	1155	495			44847
Mode %	70%	4%	15%	6%	0%	2%	3%	1%			
Vehicle Occupancy											



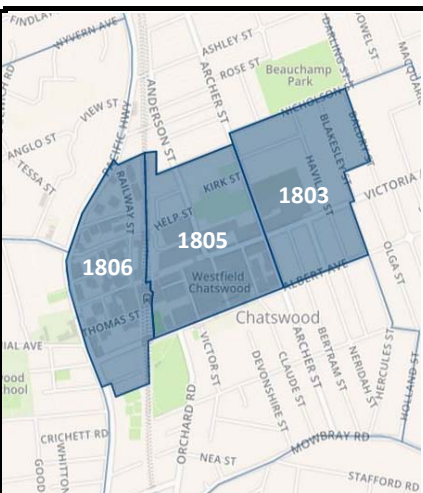
Total Area (m2)

4,769,787

BTS TRAVEL ZONES USED	
Travel Zone	Area (m2)
1536	1474066
1537	150,102
1539	230,760
1541	170,184
1543	220,579
1544	220,579
1545	386,210
1547	252,810
1548	259,278
1550	222,380
1552	200,700
1558	982,140

## OTHER CENTRES

CHATSWOOD											
IN											
MODE	Vehicle driver	Vehicle passenger	Train	Bus	Ferry / Tram	Other mode	Walked only	Mode not stated	At Home or Did not Work	Total	Total Worked
Trips	7069	668	5435	958	9	177	1278	213	1865	17672	15807
Mode %	45%	4%	34%	6%	0%	1%	8%	1%			
Vehicle Occupancy		1.09									
OUT											
Trips	650	67	1042	107	3	19	488	24	220	2620	2400
Mode %	27%	3%	43%	4%	0%	1%	20%	1%			
Vehicle Occupancy		1.10									
TOTAL											
Trips	7719	735	6477	1065	12	196	1766	237	2085	20292	18207
Mode %	42%	4%	36%	6%	0%	1%	10%	1%			
Vehicle Occupancy		1.10									

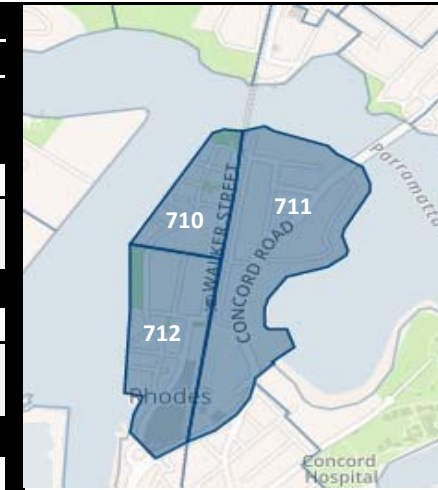


BTS TRAVEL ZONES USED	
Travel Zone	Area (m2)
1803	194,877
1805	202,992
1806	166,632
Total Area (m2)	
564,501	



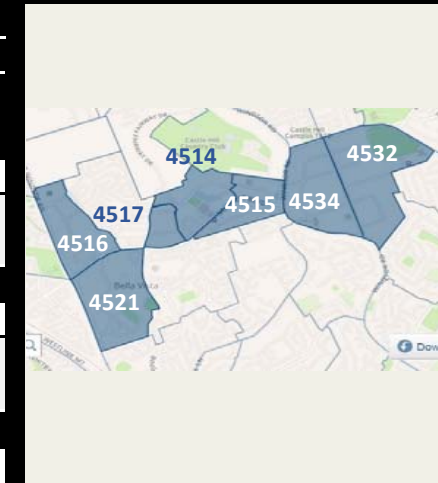


RHODES											
INCOMING											
Mode	Vehicle driver	Vehicle passenger	Train	Bus	Ferry / Tram	Other	Walked only	Not Stated	At Home or Did not Work	Total	Total Worked
Trips	6148	377	2098	99	6	121	222	108	913	10092	9179
Mode %	67%	4%	23%	1%	0%	1%	2%	1%			
Vehicle Occupancy	1.06										
OUTGOING											
Trips	1182	101	1059	34	6	26	143	33	233	2817	2584
Mode %	46%	4%	41%	1%	0%	1%	6%	1%			
Vehicle Occupancy	1.09										
TOTAL											
Trips	7330	478	3157	133	12	147	365	141	1146	12909	11763
Mode %	62%	4%	27%	1%	0%	1%	3%	1%			
Vehicle Occupancy	1.07										



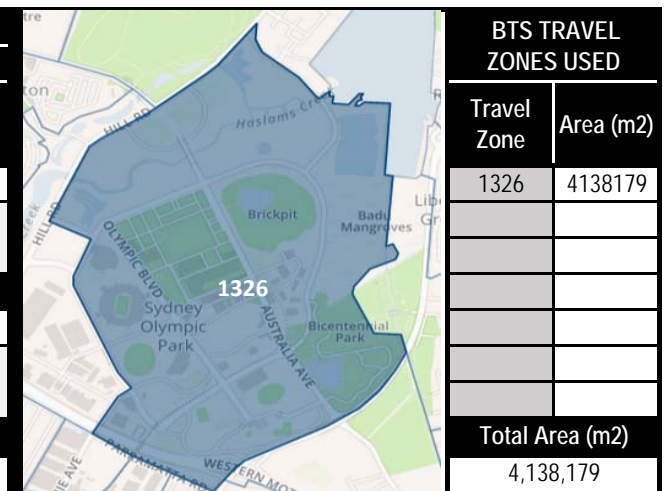
BTS TRAVEL ZONES USED	
Travel Zone	Area (m2)
710	163,360
711	539,835
712	301,009
Total Area (m2)	
1,004,204	

NORWEST											
IN											
Mode	Vehicle driver	Vehicle passenger	Train	Bus	Ferry / Tram	Other mode	Walked only	Mode not stated	At Home or Did not Work	Total	Total Worked
Trips	20402	1153	348	591	3	155	146	319	1819	24936	23117
Mode %	88%	5%	2%	3%	0%	1%	1%	1%			
Vehicle Occupancy	1.06										
OUT											
Trips	405	39	31	30	0	4	8	13	74	603	529
Mode %	76%	7%	6%	6%	0%	1%	2%	2%			
Vehicle Occupancy	1.10										
TOTAL											
Trips	20807	1192	378	621	3	158	155	332	1893	25539	23646
Mode %	88%	5%	2%	3%	0%	1%	1%	1%			
Vehicle Occupancy	1.06										



BTS TRAVEL ZONES USED	
Travel Zone	Area (m2)
4514	442,135
4515	387,027
4516	547,620
4517	547,620
4521	790,778
4532	975,645
4534	698,413
Total Area (m2)	
4,389,238	

OLYMPIC PARK											
IN											
Mode	Vehicle driver	Vehicle passenger	Train	Bus	Ferry / Tram	Other mode	Walked only	Mode not stated	At Home or Did not Work	Total	Total Worked
Trips	5569	321	1686	307	3	114	68	111	740	8919	8179
Mode %	68%	4%	21%	4%	0%	1%	1%	1%			
Vehicle Occupancy	1.06										
OUT											
Trips	3	0	0	0	0	0	0	0	6	9	3
Mode %											
Vehicle Occupancy	1.00										
TOTAL											
Trips	5569	321	1686	307	3	114	68	111	740	8919	8179
Mode %	68%	4%	21%	4%	0%	1%	1%	1%			
Vehicle Occupancy	1.06										



PARRAMATTA											
IN											
Mode	Vehicle driver	Vehicle passenger	Train	Bus	Ferry / Tram	Other mode	Walked only	Mode not stated	At Home or Did not Work	Total	Total Worked
Trips	16335	1935	10308	3326	25	323	1461	528	3713	37954	34241
Mode %	48%	6%	30%	10%	0%	1%	4%	2%			
Vehicle Occupancy	1.12										
OUT											
Trips	804	75	1109	216	10	36	358	24	188	2820	2632
Mode %	31%	3%	42%	8%	0%	1%	14%	1%			
Vehicle Occupancy	1.09										
TOTAL											
Trips	17139	2010	11417	3542	35	359	1819	552	3901	40774	36873
Mode %	46%	5%	31%	10%	0%	1%	5%	1%			
Vehicle Occupancy	1.12										

