



Lincoln Square Traffic & Parking Assessment Park Expansion Project

Prepared for City of Melbourne
20 October 2017

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1. INTRODUCTION

1.1. STUDY PURPOSE

This study presents the results of comprehensive traffic and parking surveys, undertaken near Lincoln Square, Carlton, to inform the design process for a potential “park expansion” project in this area. More specifically, this study sets out to establish the utilisation of on-street parking spaces, as well as the volume of traffic using nearby streets / intersections. The general study location is shown in Figure 1.

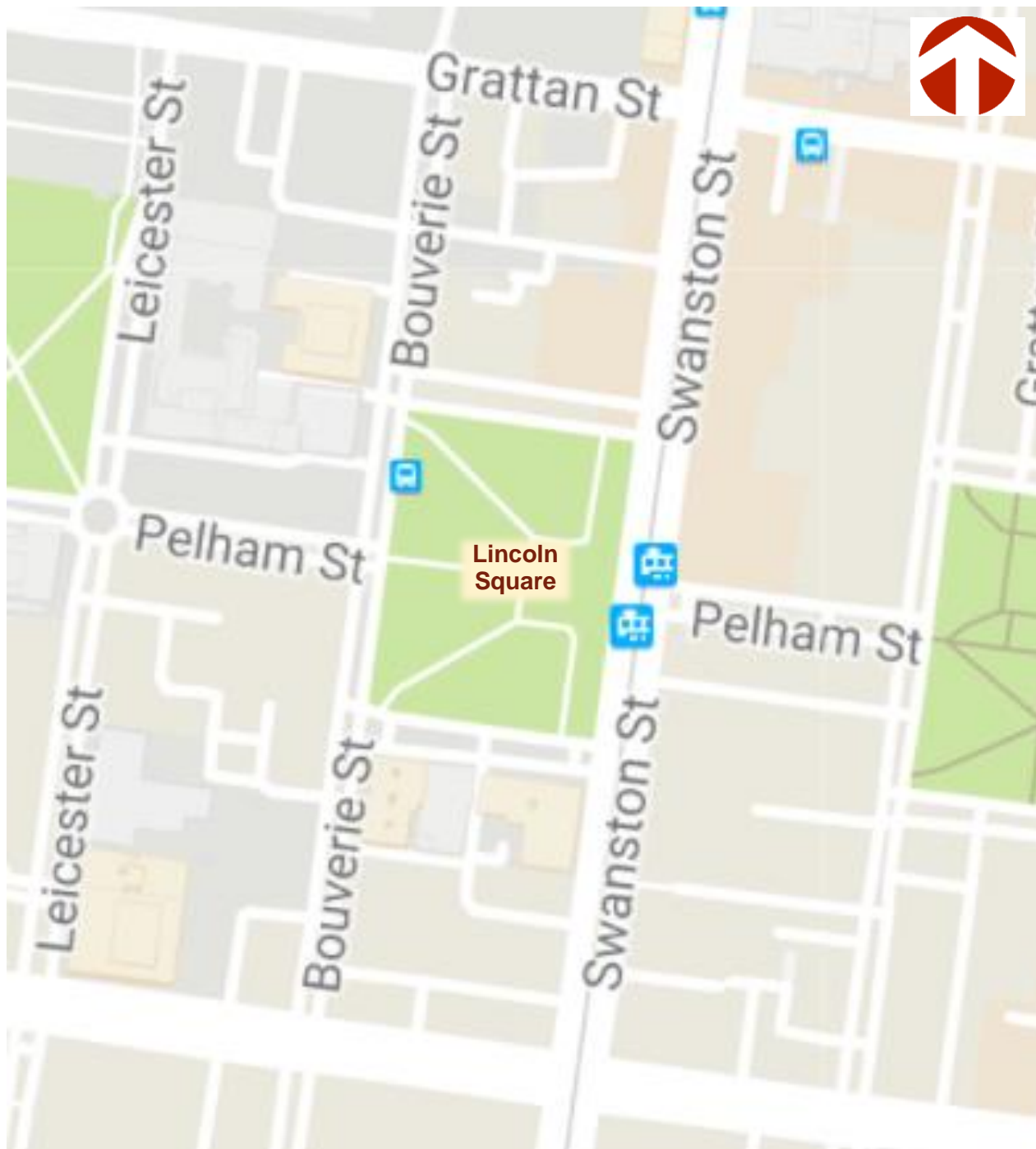


Figure 1: Study Area

The package of surveys has been targeted at providing comprehensive information on traffic and parking dynamics around Lincoln Square on typical weekdays– and thus help inform the Council’s assessment of the likely park expansion impacts, particularly with respect to the implications on:

- Whether a reduction in parking supply on surrounding streets (for the purposes of park expansion) is feasible
In this regard, the survey findings provide important insights into how parking spaces are being utilised – and by who. This information is essential in order to understand the extent to which it is realistic to consider a reduction in the supply of car parking spaces in the area surrounding Lincoln Square.
- Whether any alteration to road geometry and traffic access patterns is possible
Traffic volumes, vehicle composition and circulation patterns have been captured on the streets surrounding Lincoln Square. This allows accurate quantification of any impacts associated with alteration to the current geometry and/or traffic access arrangements.

1.2. PARK EXPANSION CONCEPT

A preliminary concept plan for park expansion has been prepared by the City of Melbourne. It involves narrowing both Lincoln Square North and Lincoln Square South while retaining two-way traffic flow. Centre-of-road parking in each of these two streets will be removed and parking adjacent to Lincoln Square converted to ‘angle-parking’. This concept is indicatively shown in Figure 2.

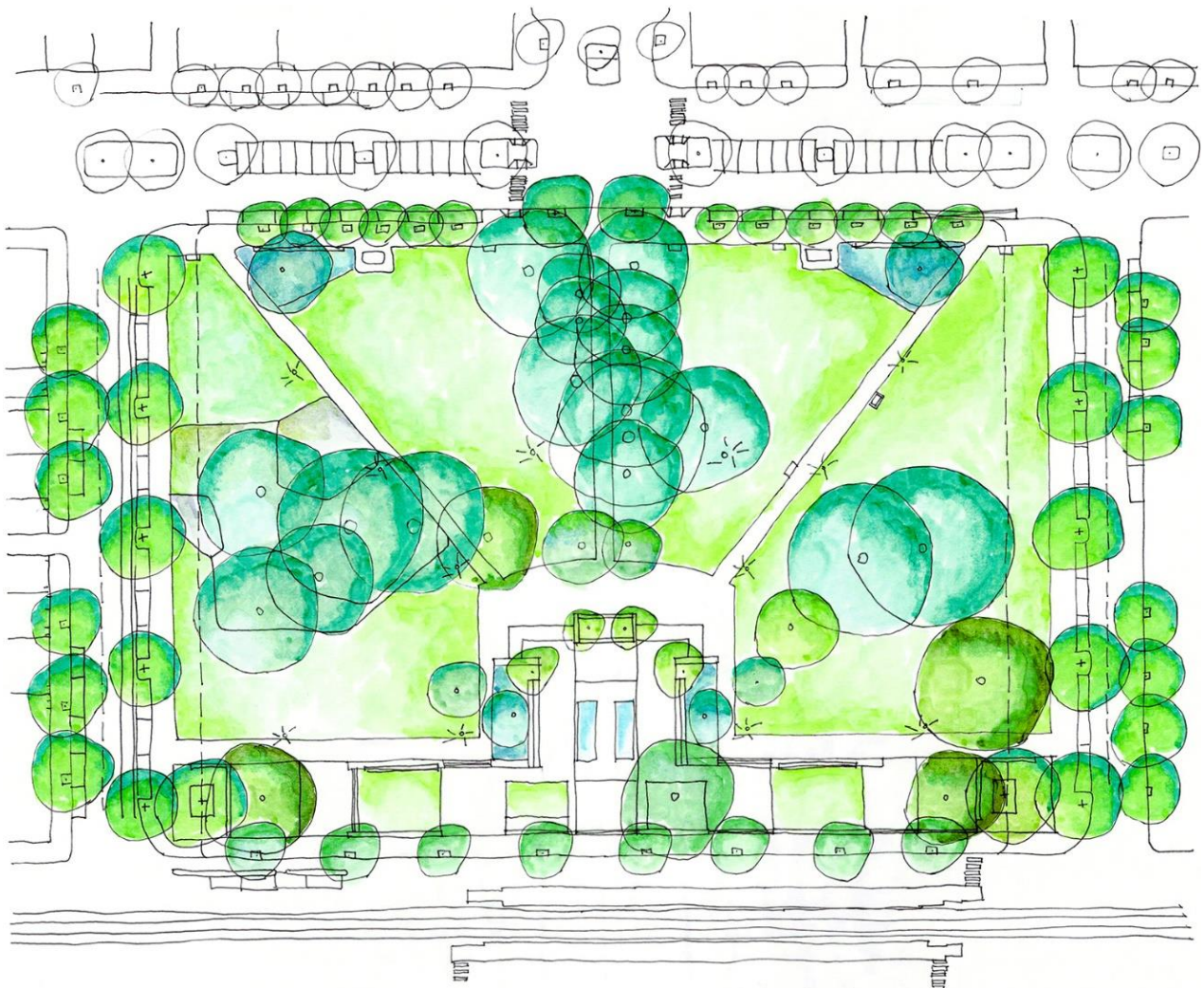


Figure 2: Lincoln Square Park Expansion – Preliminary Concept

1.3. KEY FINDINGS & CONCLUSIONS

a) Parking

At the time of the surveys, part of the on-street parking on Bouverie Street, north of Lincoln Square North, was entirely occupied by works associated with the installation of a new gas pipeline (preparatory works being undertaken ahead of major construction for the Metro tunnel project in 2018).

The construction activities affected the west side and centre-of-road parking in Bouverie Street north of Lincoln Square North. The unavailability of these parking spaces is likely to be reflected in a 'temporary' higher occupancy in the remaining publicly available parking spaces (assuming that the parking demand was the same as it would have been irrespective of roadworks – but the supply was lower by virtue of the spaces 'lost' to construction).

Notwithstanding the 'artificially' higher parking occupancy that has been measured during this study (as a result of the road construction activity) it is still considered that the survey program provides reliable insights into the parking characteristics that would prevail when 'normal' parking demand is manifested in the area (namely – the demand/supply characteristics that are unaffected by construction works). Overall, the parking surveys have shown that there is heavy demand for parking through the middle of a typical weekday. Specifically, the results of the parking surveys highlight the following:

- On weekdays, during normal business hours, the 287 parking spaces available to the public in the study area are most heavily utilised between around 10.00am and 3.00pm (over 80% occupied).
- After a marginal decrease in parking demand in the late afternoon, by 7.00pm there is once again high parking demand manifested in occupancies exceeding 80% (with many local workers having departed the high occupancy in the evening is principally the result of students from nearby Melbourne University attending evening classes).
- The high 'middle-of-the-day' parking occupancy is primarily associated with strong demand for the four-hour limit parking spaces – which represent nearly 45% of the publicly available spaces surveyed. Observations have revealed that users of these four-hour limit spaces are seeking medium to long term parking opportunities. Most are students from surrounding Melbourne University buildings as well as 'local workers' associated with the general commercial activity in the precinct.
- The two-hour limit parking spaces exhibit similar high occupancies as the four-hour limit spaces.
- In contrast to the high occupancy of the four-hour and two-hour limit spaces the one-hour parking spaces experience much lower occupancies throughout the day – though by 7.00pm occupancy rises above 80% (when the one-hour limit no longer applies) in common with the patterns observed in the four-hour and two-hour limit zones
- Early morning weekday parking demand is modest across all parking restrictions.

The monitoring of motorists' destinations (after parking near Lincoln Square) has indicated that very little of the parking demand manifested in this area is actually associated with users of the Lincoln Square park (most park visitors have actually been observed arriving on foot).

In this context, it is concluded that the range of short to medium-term parking spaces areas available in the study area are generally being used for non-park related purposes, including a substantial level of medium to long term parking (students and local workers). The observed medium to long term commuter parking practices in this area is contrary to Council's long-standing policies to discourage the use of private vehicles for the commuting journey for work/study purposes. In fact, the expectation outlined in Council's latest Transport Strategy 2012 is to realise a significant reduction in the use of private vehicles for all trip purposes – including the journey to and from work.

These targets are directly relevant to the management of parking and traffic across the municipality and in the precinct surrounding Lincoln Square. Reducing the supply of medium to long-term on-street parking used by commuters can be an incentive for motorists to switch from car use to more sustainable transport modes.

b) Traffic

Weekday peak hour traffic volumes on Lincoln Square South and Lincoln Square North are generally very low. In the AM peak there are only a few dozen movements in any direction in both streets. The only traffic volumes of any significance were measured in the PM peak hour. At this time, the eastbound traffic flows on Lincoln Square South and Lincoln Square North reached levels of 257 vehicles/hour and 192 vehicles/hour respectively. Whilst these volumes were the highest recorded on these streets, they are not particularly high in the context of inner city traffic flows (and are consistent with a 'local street' function). Furthermore, most importantly, the majority of this traffic was deemed to be associated with the temporary closure of Bouverie Street north of Lincoln Square North. The closure affected the northbound carriageway – thus forcing those motorists to turn into either Lincoln Square South or Lincoln Square North. Monitoring revealed that almost all of the eastbound movements in each street were 'through' movements (travelling directly from Bouverie Street to Swanston Street). Only a very low number of the eastbound vehicles originated locally within Lincoln Square South or Lincoln Square North – from either on-street or off-street parking. Thus, it is estimated that if Bouverie Street had been open, much of the eastbound traffic on Lincoln Square South and Lincoln Square North (likely to be 90-95%) would have remained on Bouverie Street and not used Lincoln Square South and Lincoln Square North.

In summary, other than a comparatively low number of legitimate local vehicles accessing properties (including buses servicing the Rydges on Swanston hotel via Lincoln Square North) most of the motorists on these two streets are simply 'looking for longer term parking but with a more remote destination'. Some vehicles, particularly in the PM peak when parking demand is heaviest around 7.00pm, were observed circulating multiple times in search of parking. Neither Lincoln Square South or Lincoln Square North experiences any significant short-cutting by non-local traffic – except for the temporary spike in eastbound traffic caused by the closure of the northbound carriageway in Bouverie Street.

1.4. SUMMARY

This study has concluded that it is feasible to pursue open space enhancement opportunities in Lincoln Square, with some decrease in car parking supply, specifically the discouragement of medium-long term (the 4-hour limit parking represents the greatest supply around the park and generates the greatest parking demand). A reduction in the amount of 4-hour parking available in this area (currently used for student/local worker commuter parking purposes) is consistent with Council transport policy. The relative lack of alternative on-street medium to long term parking in the broader precinct would likely force commuters to either switch modes, utilise off-street parking or compete with other commuters who are currently using scarce longer term on-street parking further afield.

Notwithstanding the above, there are a number of other projects which have, or are about to, result in car parking losses throughout Carlton (likely over 400 on-street spaces). Parking spaces around Lincoln Square will experience some increased demand, even before any additional parking losses required to accommodate an extension of this park. The other projects that will generate parking losses in the immediate area include:

- Queensberry Street – Traffic Capacity Increase: 109 spaces already removed
- University Square Park Expansion Project: 177 spaces to be removed in 2017
- Grattan Street – closure for Melbourne Metro construction: Approximately 80 spaces to be removed in 2017

In addition, based on the traffic volume and patterns observed, it is considered feasible to pursue a reduction in the carriageway width in both Lincoln Square North and Lincoln Square South. The reduced carriageway width (and retention of two-way flow) in Lincoln Square North and Lincoln Square South is not expected to cause adverse traffic impacts as both streets carry exceptionally low traffic volumes – most of which is simply 'circulating' looking for parking.

2. POLICY CONTEXT

The most relevant local policies, in the context of considering traffic and parking issues around Lincoln Square are the City of Melbourne's "Transport Strategy" and the "Carlton Urban Forest Precinct Plan 2013 – 2023". Lincoln Square is within the area covered by the Carlton Urban Forest Precinct Plan.

2.1. TRANSPORT STRATEGY 2012



Figure 3: City of Melbourne Transport Strategy

The strategy has six key directions which outline the areas in which the City of Melbourne's advocacy and actions will be concentrated. These are:

- integrate transport and land use planning
- go anywhere, anytime public transport for inner Melbourne
- optimise the transport effectiveness of inner Melbourne's roads
- create pedestrian friendly high-mobility public transport streets in the central city
- make Melbourne a cycling city
- foster innovative, low-impact freight and delivery in central Melbourne

The Strategy sets out high-level targets as follows:

By 2020

- 90% of all commuter trips to the CBD will be by public transport, cycling or walking.

By 2030

- 80% of all trips to the City of Melbourne will be by public transport, cycling or walking
- 95% of all trips within the municipality will be by public transport cycling and walking

It is evident from the high-level targets that the City of Melbourne's Transport Strategy has set key directions and policy targets that are aimed at increasing the use of public transport, walking and cycling. In turn, Council's expectation is to realise a significant reduction in the use of private vehicles for all trip purposes – including the journey to and from work. Hence these targets are directly relevant to the management of parking and traffic across the municipality and in the precinct surrounding Lincoln Square. Reducing the supply of low-cost long-term on-street parking used by commuters can be an incentive for motorists to switch from car use to more sustainable transport modes.

2.2. CARLTON URBAN FOREST PRECINCT PLAN 2013 – 2023

Lincoln Square lies at the southern end of Carlton's Urban Forest precinct. The overall precinct is shown in Figure 5.

The City of Melbourne's "urban forest precinct plans" are designed to help to guide implementation of the urban forest strategy in Melbourne's streets. The information provided in the plans directs the annual tree planting program to achieve urban forest strategy objectives, protect and enhance neighbourhood character, and to prioritise works and budgets within each precinct.

When considering the role of Lincoln Square, it is relevant to note that the Carlton Urban Forest Precinct Plan identifies Pelham Street as a connector between open space with the potential to be managed more specifically for biodiversity and pedestrian amenity. Opportunities to enhance biodiversity would include selecting bird and pollinator attracting species and adding layers of vegetation to provide structural diversity.



Figure 4: Carlton Urban Forest Precinct Plan



Figure 5: Area Covered by the Carlton Urban Forest Precinct



The role of Pelham Street as a biodiversity corridor and its relationship with Lincoln Square is shown in Figure 6 (reproduction of *Map 6: Canopy Cover and Biodiversity Outcomes* in the Carlton Urban Forest Precinct Plan).

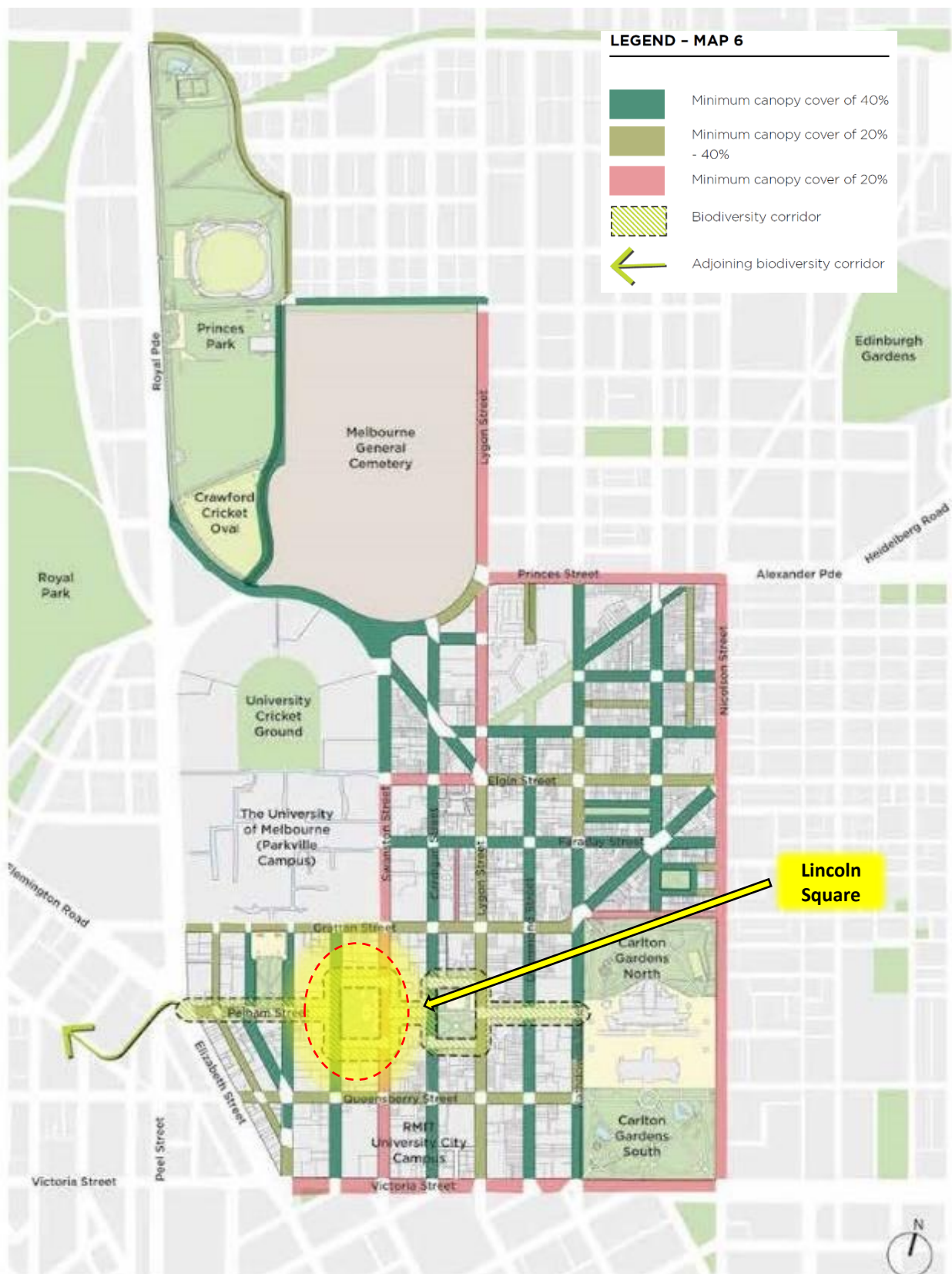


Figure 6: Canopy Cover and Biodiversity Outcomes

It can be seen in Figure 6 that various streets surrounding Lincoln Square (Pelham, Lincoln Square North, Lincoln Square South and the parts of Bouverie and Swanston Streets adjacent to the reserve) are identified as integral parts of the biodiversity corridor.

In addition, Bouverie and Swanston Streets are nominated for minimum canopy cover targets of 40% and 20% respectively. Examples of the types of treatments envisaged are shown in Figure 7 and Figure 8.

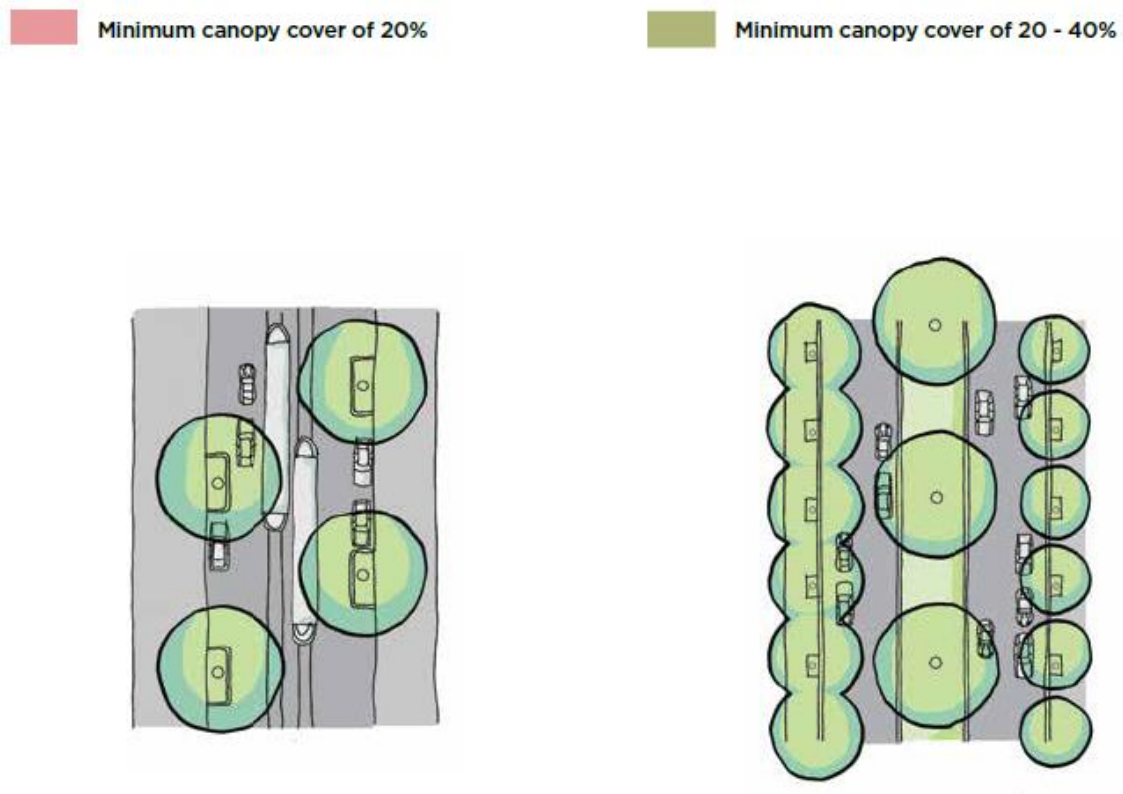


Figure 7: Guiding Principles and Considerations for Tree Planting

Minimum canopy cover of 40%

Biodiversity objective maximise canopy

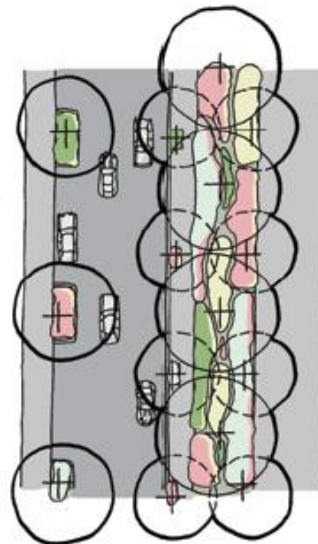
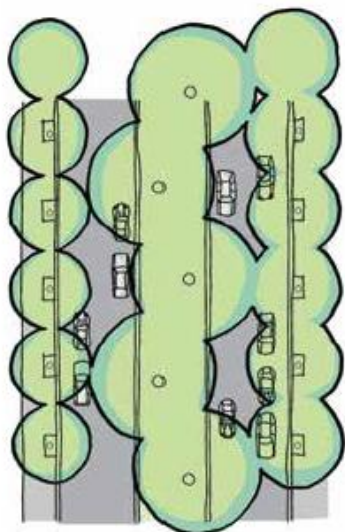


Figure 8: Guiding Principles and Considerations for Tree Planting

A 10-year planting plan has been identified to realise the objectives of the Urban Forest initiatives for Carlton as shown in Figure 9 (reproduction of *Map 9: 10-Year Planting Plan* in the Carlton Urban Forest Precinct Plan).

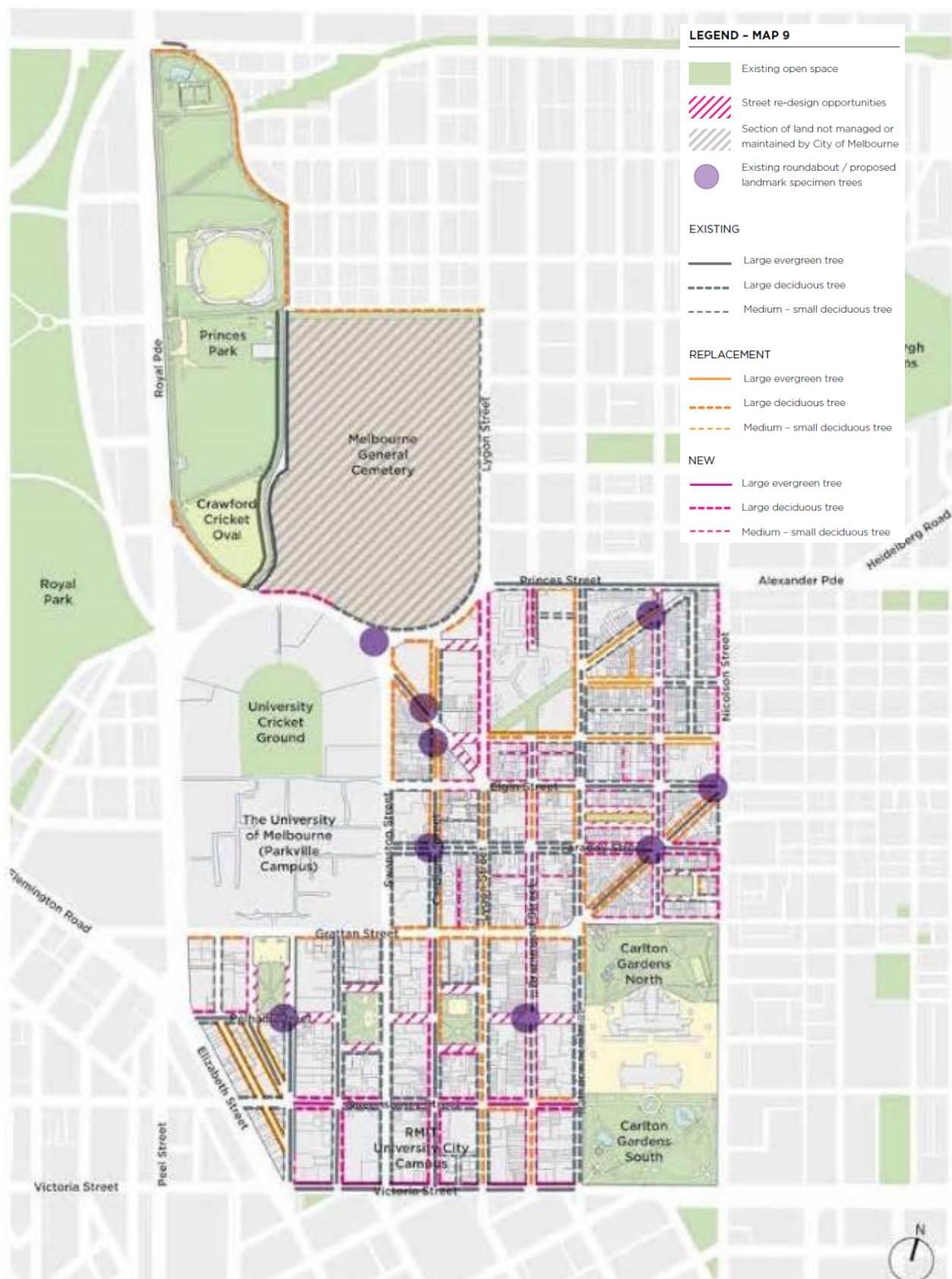


Figure 9: 10-year Planting Plan

The 10-year Planting Plan provides direction on where new and replacement planting is to occur across Carlton. It identifies “street re-design opportunities” for Lincoln Square North and South and for both sections of Pelham Street (east and west of Lincoln Square).

3. PARKING SURVEYS

3.1. OVERVIEW

Comprehensive ‘parking availability’ surveys have been undertaken over a 12-hour duration (from 7am to 7pm) on a typical weekday in August 2017 in order to provide a complete picture of fluctuating parking demand over time. The purpose of the surveys has been to capture the number of occupied on-street parking spaces in the streets surrounding Lincoln Square, as well as the number of vehicles displaying Council’s ‘Resident Parking Permits’.

The on-street parking surveys were originally designed to cover the following road sections:

- Bouverie Street, between Grattan and Queensberry Streets
- Swanston Street, between Grattan and Queensberry Streets
- Lincoln Square South
- Lincoln Square North
- Pelham Street, between Bouverie and Leicester Streets

However, at the time of undertaking the field work, part of the on-street parking on Bouverie Street, north of Lincoln Square North was entirely occupied by a construction site associated with the installation of a new gas pipeline (preparatory works being undertaken ahead of major construction for the Metro tunnel project in 2018). In addition, some parking spaces on the west side of Swanston Street just north of Queensberry Street were ‘unavailable’ as they were signed as ‘works zone’ – as building construction was taking place adjacent.

3.2. PARKING INVENTORY

After ‘removal’ of the parking spaces in Bouverie and Swanston Streets that were affected by the roadworks or building works, a total of 287 publicly available parking spaces were surveyed around Lincoln Square – as shown in Figure 10. This total excludes loading zones, drop-off zones, disabled parking and car-share spaces (an additional 28 spaces collectively) as well as a bus zone on the east side of Bouverie Street.

Most of the 287 parking spaces are governed by time-based restrictions and fees are payable. The operating hours for the majority of spaces cover the periods between 7.30am and 6.30pm Monday to Friday and between 7.30am and 12.30pm on Saturday, but are unrestricted thereafter – and thus available for ‘free and unlimited’ public parking on weekday evenings, Saturday afternoon / evening and all day Sunday. The 287 parking spaces comprise:

- 141 Four-hour limit ‘ticket’ parking spaces
- 67 Two-hour limit ‘ticket’ parking spaces
- 49 One-hour limit ‘ticket’ parking spaces
- 14 Half-hour limit ‘free’ parking spaces with resident-permit exemption
- 16 Quarter-hour limit ‘free’ parking spaces

In addition to these publicly available parking spaces there were other parking areas in the study area generally unavailable for public parking, at most times, including:

- 1 bus stop
- 8 disabled parking spaces
- 16 loading zone spaces
- 2 car-share spaces
- 2 pick-up / set-down spaces

The distribution of both publicly available and other restricted parking facilities is shown in Figure 10. The full inventory is provided at Table 1.

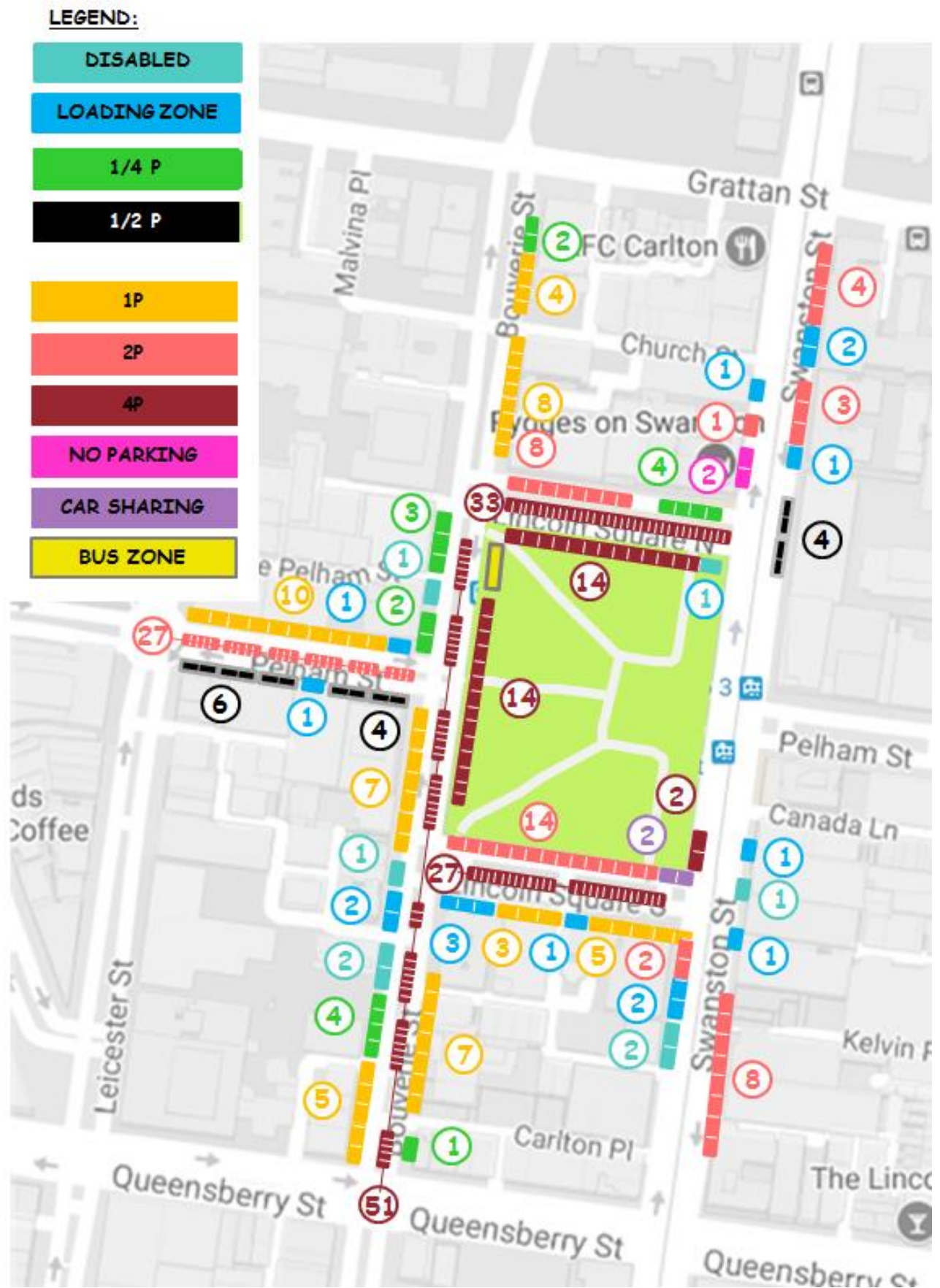


Figure 10: Lincoln Square – Distribution of Parking Spaces

PARKING SPACES INVENTORY				
RESTRICTION	DAYS/HOURS OF OPERATION	FEE	SPACES	PROPORTION
1/4P (Quarter Hour Limit Parking)	7:30am-11:00pm	No	4	5.1%
	7:00am-7:00pm	No	11	
	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday)	No	1	
1/2P (Half Hour Limit Parking; Resident Permit Excepted)	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday)	No	14	4.4%
1P (One Hour Limit Parking)	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday)	Yes	49	15.6%
2P (Two Hour Limit Parking)	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday)	Yes	67	21.3%
4P (Four Hour Limit Parking)	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday)	Yes	141	44.8%
SUBTOTAL (Publicly available spaces)			287	91.1%
Disabled	<i>Operating at all times</i>	No	6	2.5%
	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday)	No	2	
Car Sharing	<i>Operating at all times</i>	No	2	0.6%
Loading Zone	LZ 7:30am-6:30pm (Mon-Fri) (15 minutes limit) & 2P 7:30am-12:30pm (Saturday)	No	2	5.1%
	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday) (15 minutes limit)	No	6	
	7:30am-6:30pm (Mon-Fri) (15 minutes limit)	No	2	
	7:30am-6:30pm (Mon-Fri) & 7:30am-12:30pm (Saturday) (30 minutes limit)	No	6	
No parking (Pick-up/Drop-off Zone)	<i>Operating at all times</i>	No	2	0.6%
SUBTOTAL (Disabled, car-sharing, loading zone and drop-off zone)			28	8.9%
TOTAL			315	100%

Table 1: Lincoln Square Parking Inventory

3.3. RESULTS

The results presented in this section focus on usage of the 287 ‘publicly available parking spaces’; namely the parking spaces previously identified in Table 1, which include:

- Four-hour limit ‘ticket’ parking spaces (all located in Swanston Street, Bouverie Street, Lincoln Square North and Lincoln Square South) – 141 spaces total
- Two-hour limit ‘ticket’ parking spaces (all located in Swanston Street, Pelham Street, Lincoln Square North and Lincoln Square South) – 67 spaces total
- One-hour limit ‘ticket’ parking spaces (all located in Bouverie Street, Pelham Street and Lincoln Square South) – 49 spaces total
- Half-hour limit ‘free’ parking spaces with resident-permit exemption (all located in Swanston Street and Pelham Street) – 14 spaces total
- Quarter-hour limit ‘free’ parking spaces (all located in Bouverie Street and Lincoln Square North) – 16 spaces total

a) Overview – Parking Occupancy All Spaces

The overall parking survey findings around Lincoln Square are shown in Table 2 (the table shows parking occupancy for the 287 publicly available spaces – at hourly time intervals – on the weekday surveyed).

PARKING OCCUPANCY - ALL STREETS PUBLICLY AVAILABLE SPACES		
Time	Number of Parking Spaces Occupied	Proportion
7:00am	30	10%
8:00am	59	21%
9:00am	216	75%
10:00am	241	84%
11:00am	261	91%
12:00pm	252	88%
1:00pm	253	88%
2:00pm	251	87%
3:00pm	233	81%
4:00pm	182	63%
5:00pm	196	68%
6:00pm	216	75%
7:00pm	232	81%
Overall Parking Occupancy Rating	Range (Proportion of Spaces Occupied)	Colour Code
Low	< 60% Occupied	
Moderate	60% - 80% Occupied	
High	> 80 % Occupied	

Table 2: Lincoln Square – Summary of Parking Occupancy Results

The colour-coding shown in Table 2 highlights the intensity of parking demand at hourly intervals on the weekday surveyed. ‘Green’ shaded cells represent times of low parking demand and generous spare capacity, ‘orange’ cells represent medium parking demand, whereas ‘red’ cells denote times of high parking demand.

Figure 11 shows the variation in parking demand over the 12 hours between 7.00am and 7.00pm.

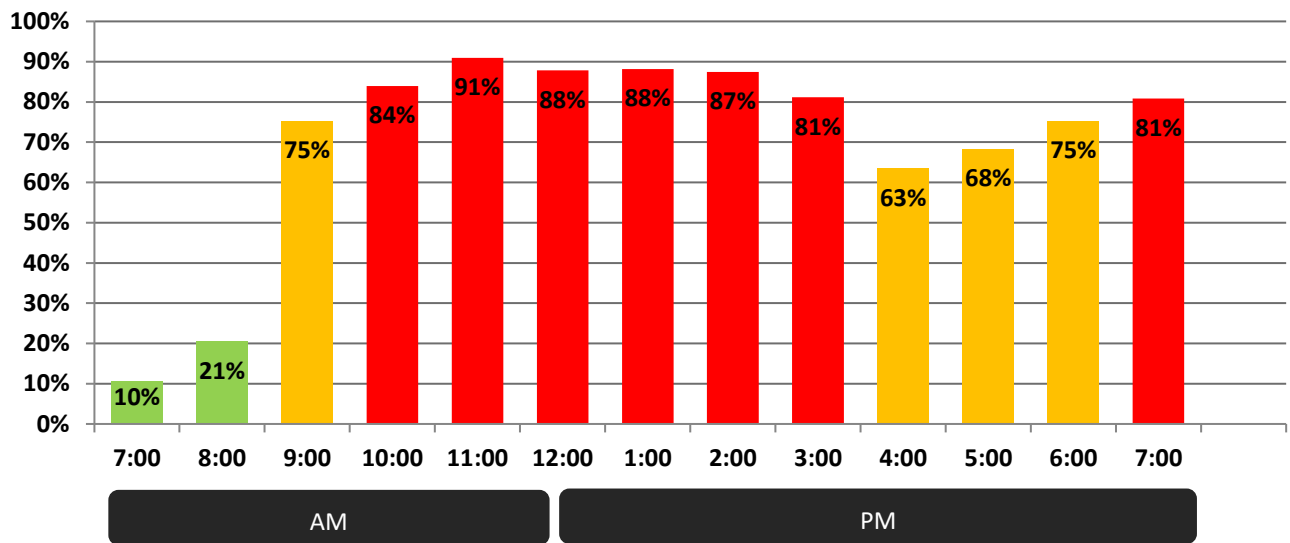


Figure 11: All Publicly Available Parking Spaces – Occupancy by Hour (Weekday)

The results shown in Figure 11 highlight the following:

- On weekdays, the 287 parking spaces available to the public in the study area are most heavily utilised between around 10.00am and 3.00pm and at 7.00pm
- Early morning weekday parking demand is modest

In order to further understand the contributing causes of the observed high occupancy (given the number of different time-limit restrictions found in the study area – each designed/intended to service different user groups) the parking survey results have been aggregated and assessed by each of the main "time-restrictions" (four-hour, tow-hour and one-hour limits). This provides a more insightful appreciation of parking dynamics in the area. The results are presented in the following sections in decreasing order of 'importance'; with the most dominant restriction (four-hour limit parking – 141 spaces) discussed first and the least dominant (one-hour limit parking – 49 spaces) discussed last. Collectively, these 3 categories represent 90% of the publicly available parking; namely 257 out of the 287 parking spaces that have been surveyed.

The remaining 10%v of publicly available spaces (14 half-hour limit 'free' parking spaces with resident-permit exemption – all located in Swanston Street and Pelham Street; and 16 quarter-hour limit 'free' parking spaces – all located in Bouverie Street and Lincoln Square North) were found to be used for their intended purpose. The half-hour limit spaces experienced steady occupancy, largely by vehicles displaying resident permits whilst the quarter-hour limit spaces were lightly occupied – thus offering abundant short-term access opportunities for visitors, deliveries and servicing purposes; precisely the intent of these restrictions.

Figure 12 to Figure 16 show typical parking occupancies in the study area around lunchtime.



**Figure 12: Lincoln Square North – Weekday Midday Parking Conditions
(approximately 12.15pm)**



**Figure 13: Bouverie Street, north of Lincoln Square South – Weekday Midday Parking Conditions
(approximately 11.45am)**



Figure 14: Pelham Street, between Bouverie St and Leicester St – Weekday Midday Parking Conditions (approximately 11.30am)



**Figure 15: Lincoln Square South – Weekday Midday Parking Conditions
(approximately 11.45am)**



Figure 16: Swanston Street, Weekday Midday Parking Conditions (approximately 12noon)

b) Four-hour Limit Parking (141 spaces)

The most common parking restriction in the study area is four-hour limit ‘ticket’ parking (all located in Swanston Street, Bouverie Street, Lincoln Square North and Lincoln Square South). There are 141 spaces covered by that restriction – representing nearly 45% of the 287 spaces available to the public during normal weekday business hours.

Figure 17 shows that the four-limit parking experiences near full occupation between 9am and 3pm and observations indicate it is used for medium to long term commuter parking by local workers and students at nearby Melbourne University.

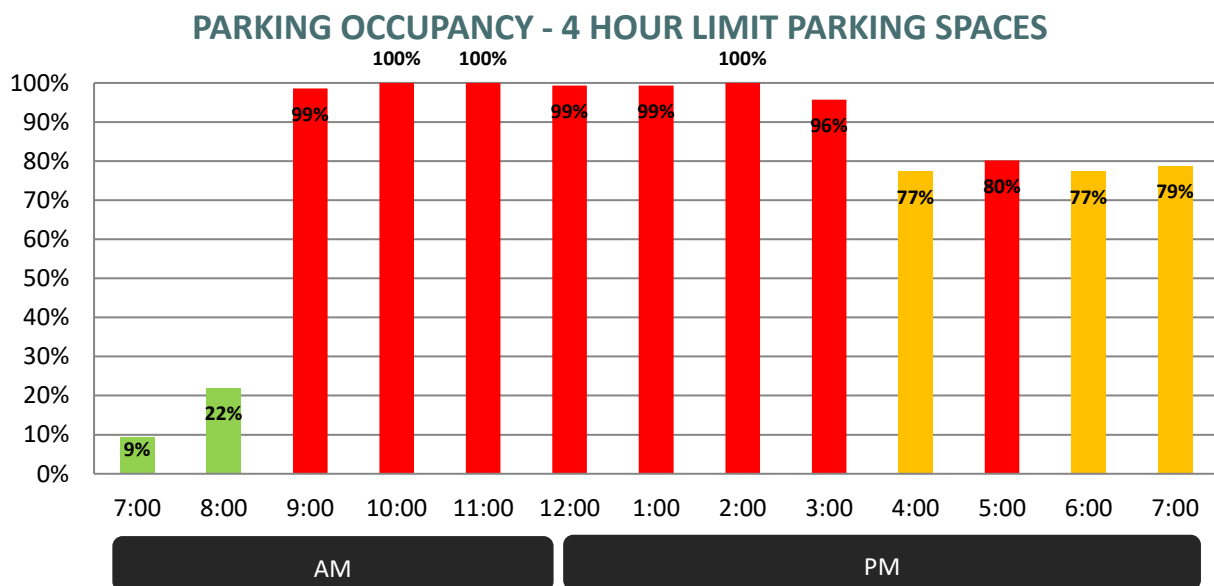


Figure 17: Four-hour Limit Parking – Occupancy by Hour (Weekday)

c) Two-hour Limit Parking (67 spaces)

The next most common parking restriction in the study area is two-hour limit ‘ticket’ parking (all located in Swanston Street, Pelham Street, Lincoln Square North and Lincoln Square South). There are 67 spaces covered by that restriction – representing just over 23% of the 287 spaces available to the public during normal weekday business hours.

Figure 18 shows the proportion of parking spaces occupied on Thursday during each hour between 7.00am and 7.00pm. It is evident that the parking demand is heavy from around 10am onwards. The high demand between 10.00am and 3.00pm reflects a combination of local worker / student parking as well as more ‘legitimate’ short-term parking by general visitors to the area. The high demand from 6.00pm onwards is largely associated with student parking – taking advantage of the fact that the two-hour ticket-parking restrictions cease to apply at 6.30pm.

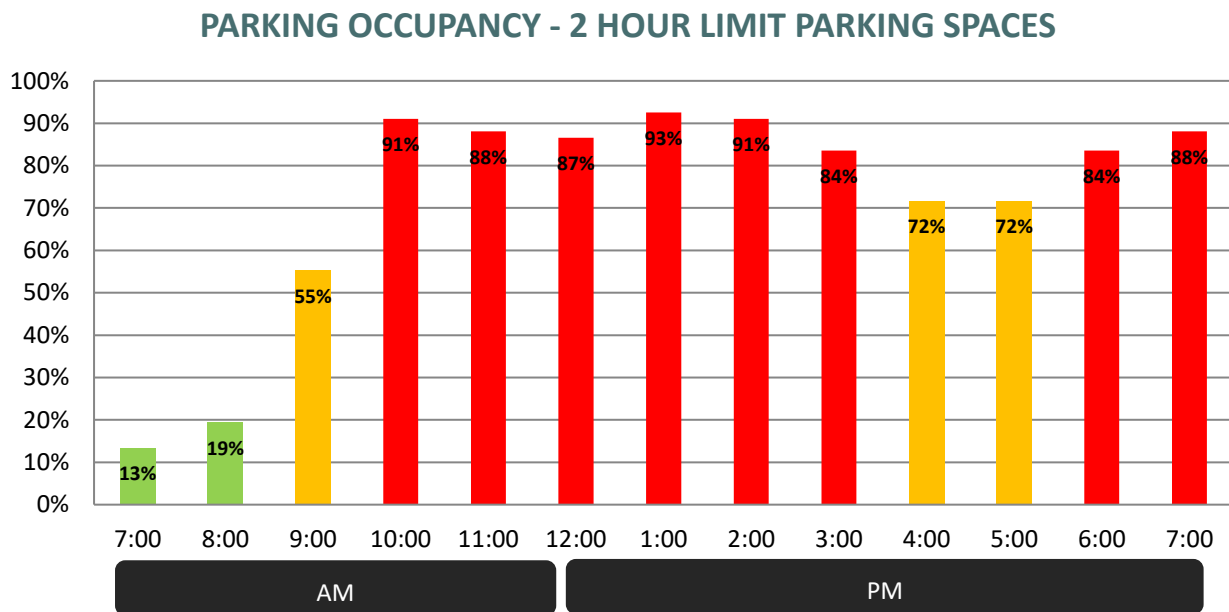


Figure 18: Two-hour Limit Parking – Occupancy by Hour (Weekday)

d) One-hour Limit Parking (49 spaces)

The least common parking restriction in the study area is one-hour limit ‘ticket’ parking (all located in Bouverie Street, Pelham Street and Lincoln Square South). There are 49 spaces covered by that restriction – representing just over 17% of the 287 spaces available to the public during normal weekday business hours. The one-hour limit parking was found to be the ‘least busy’ throughout the day. In common with other areas, the occupancy surpassed 80% in the evening when the one-hour ticket-parking restrictions cease to apply at 6.30pm. The fluctuation in parking demand is shown in Figure 19.

PARKING OCCUPANCY - 1 HOUR LIMIT PARKING SPACES

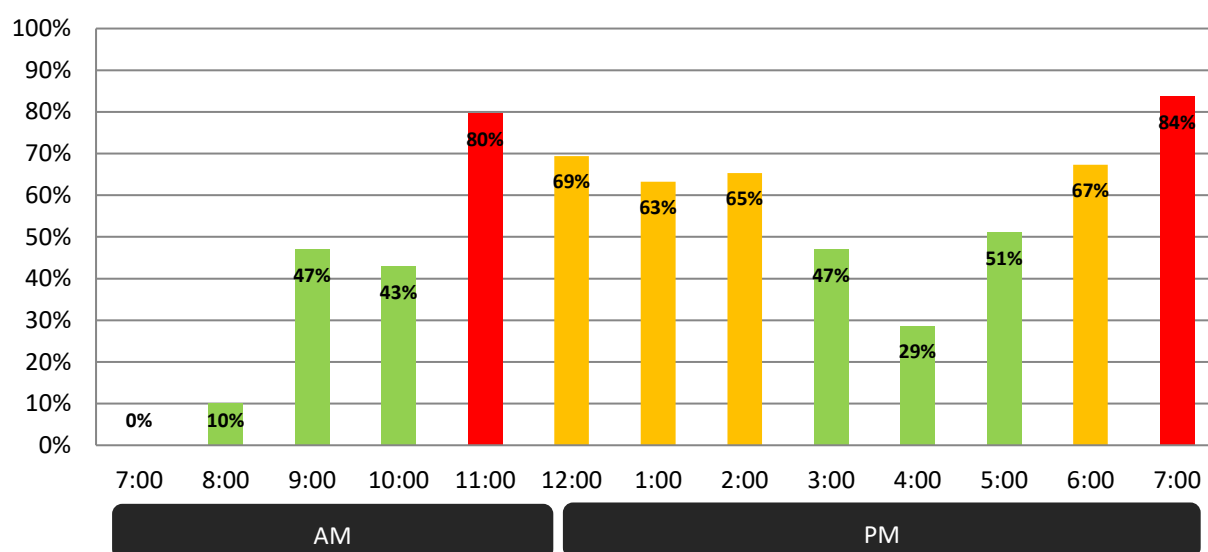


Figure 19: One-hour Limit Parking – Occupancy by Hour (Weekday)

e) Summary

Overall, the parking statistics presented in the previous sections show that there is heavy demand for parking in the middle of a typical weekday and in the evening. This heavy demand is principally associated with the four-hour limit and two-hour limit parking spaces. The one-hour limit parking experiences much lower demand, as do the shorter term restrictions (half-hour and quarter-hour limits) – all of which are principally targeted to serve the needs of the immediate abutting properties.

It has been concluded that both the four-hour and two-hour limit parking areas (collectively around 68% of the publicly available parking) are subject to high levels of student and local worker parking – rather than supporting general visitation to the area.

These shorter term parking areas (one-hour limit, half-hour and fifteen-minute limit) generally experience less intense parking demand and offer generous parking opportunities in support of local needs.

3.4. IMPACTS FROM OTHER PROJECTS

There are a number of other projects which have, or are about to result in car parking losses throughout Carlton (likely over 400 on-street spaces). Parking spaces around Lincoln Square will experience some increased demand, even before any additional parking losses required to accommodate an extension of this park. The other projects that will generate parking losses in the immediate area include:

- Queensberry Street – Traffic Capacity Increase: 109 spaces already removed
- University Square Park Expansion Project: 177 spaces to be removed in 2017
- Grattan Street – closure for Melbourne Metro construction: Approximately 80 spaces to be removed in 2017

4. TRAFFIC SURVEYS

4.1. OVERVIEW

Manual traffic surveys were undertaken in August 2017. This involved recording all traffic movements at four intersections over the AM and PM peak periods. The locations selected for the manual turning movement traffic counts were:

- Bouverie Street/ Lincoln Square North
- Bouverie Street/ Lincoln Square South
- Swanston Street/ Lincoln Square North
- Swanston Street/ Lincoln Square South

Key traffic aspects that are relevant for Lincoln Square and that were specifically captured by the manual traffic survey program include:

- Extent of non-local traffic using Lincoln Square North and Lincoln Square South
- Volume and nature of traffic flow on Lincoln Square North and Lincoln Square South

The traffic survey package was tailored to capture prevailing local traffic conditions and to provide optimum intelligence on traffic movements around Lincoln Square, specifically the utilisation and role of Lincoln Square North and Lincoln Square South.

4.2. TRAFFIC SURVEY RESULTS

On the weekday surveyed, it was found that both Lincoln Square North and Lincoln Square South are lightly utilised in peak hours. The traffic volumes recorded in the AM and PM peak hours are shown in Figure 20 and Figure 21.

The 'traffic' needs of abutting properties were found to be modest – with low levels of traffic accessing off-street parking and/or using on-street parking for deliveries/servicing. The greater proportion of traffic movements in each of Lincoln Square North and Lincoln Square South is associated with either:

- students and local workers circulating looking for parking spaces ('driving around' and U-turning in these streets in search of parking); or
- short-cutting traffic travelling from Bouverie Street to Swanston Street (much of this is attributable to the temporary closure of the northbound carriageway of Bouverie Street – north of Lincoln Square North)

In the AM peak the highest traffic volume on Lincoln Square South was found to be the eastbound movement at Bouverie Street – where 62 vehicles entered in an hour (around one vehicle per minute). On Lincoln Square North, the highest traffic was also found to be the eastbound movement at Bouverie Street – where 25 vehicles entered in an hour (around one vehicle every two minutes).

The only traffic volumes of any significance were measured in the PM peak hour. At this time, the eastbound traffic flows on Lincoln Square South and Lincoln Square North reached levels of 257 vehicles/hour and 192 vehicles/hour respectively. Whilst these volumes were the highest recorded on these streets, they are not particularly high in the context of inner city traffic flows (and are consistent with a 'local street' function). Furthermore, most importantly, the majority of this traffic was deemed to be associated with the temporary closure of Bouverie Street north of Lincoln Square North. The closure affected the northbound carriageway – thus forcing those motorists to turn into either Lincoln Square South or Lincoln Square North. Monitoring revealed that almost all of the eastbound movements in each street were 'through' movements (travelling directly from Bouverie Street to Swanston Street). Only a very low number of the eastbound vehicles originated locally within Lincoln Square South or Lincoln Square North – from either on-street or off-street parking.

On the basis of the monitoring undertaken, it is estimated that if Bouverie Street had been open, much of the PM peak hour eastbound traffic on Lincoln Square South and Lincoln Square North (likely to be 90-95%) would have remained on Bouverie Street and not used Lincoln Square South and Lincoln Square North.

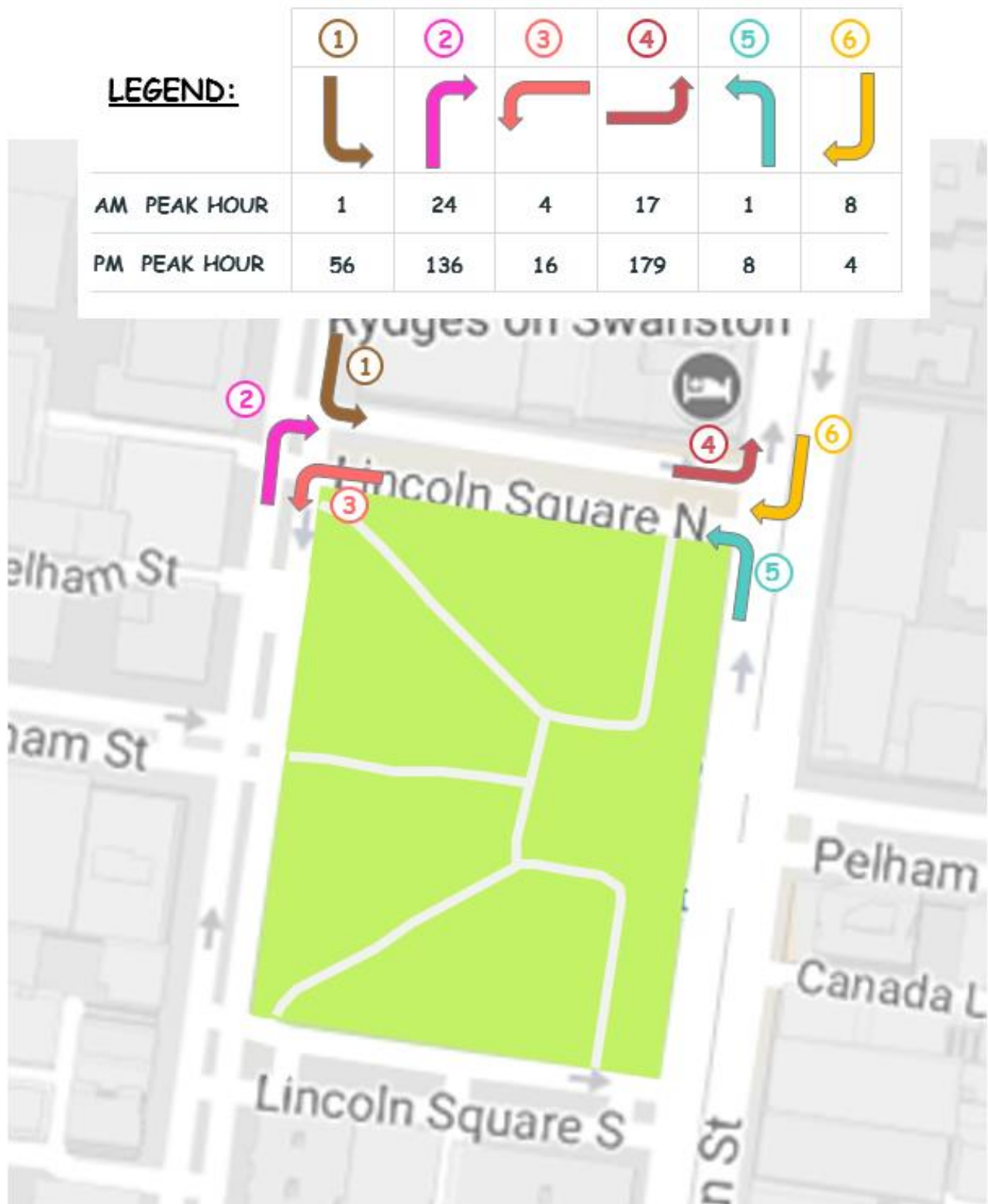


Figure 20: Traffic Patterns in Lincoln Square North in the AM and PM Peak Hours

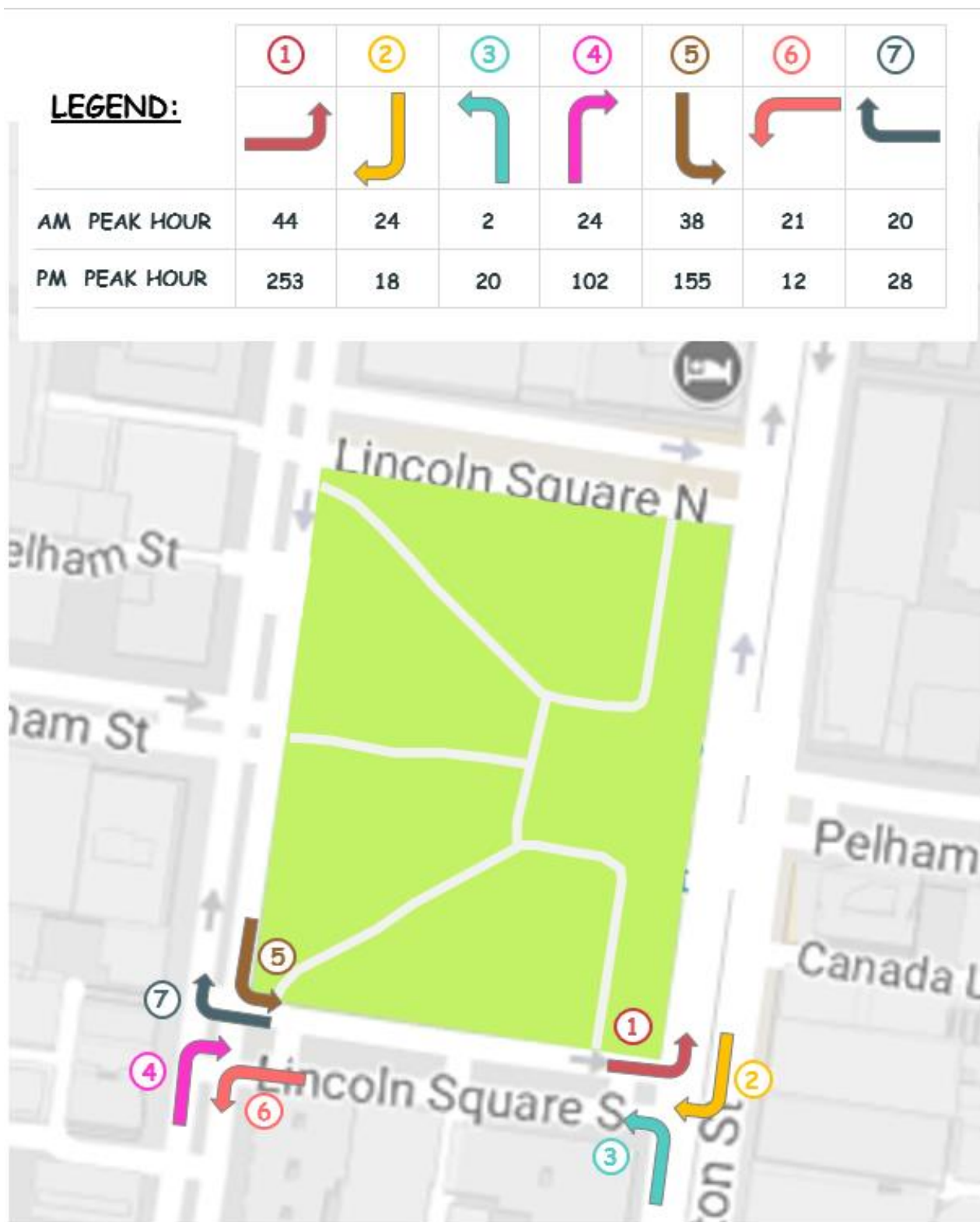


Figure 21: Traffic Patterns in Lincoln Square South in the AM and PM Peak Hours

5. PEDESTRIAN SURVEYS

Pedestrian movement surveys were undertaken to capture activity across Lincoln Square between Pelham Street and Swanton Street. Much of this activity was found to be students moving to/from the Swanton Street tram stops. The two-way east-west movements reached nearly 930 pedestrians/hour in the AM peak and nearly 730 pedestrians/hour in the PM peak, as shown in Figure 22. The focal point of street-crossing movements at Bouverie Street was found to be the intersection with Pelham Street.

LEGEND:

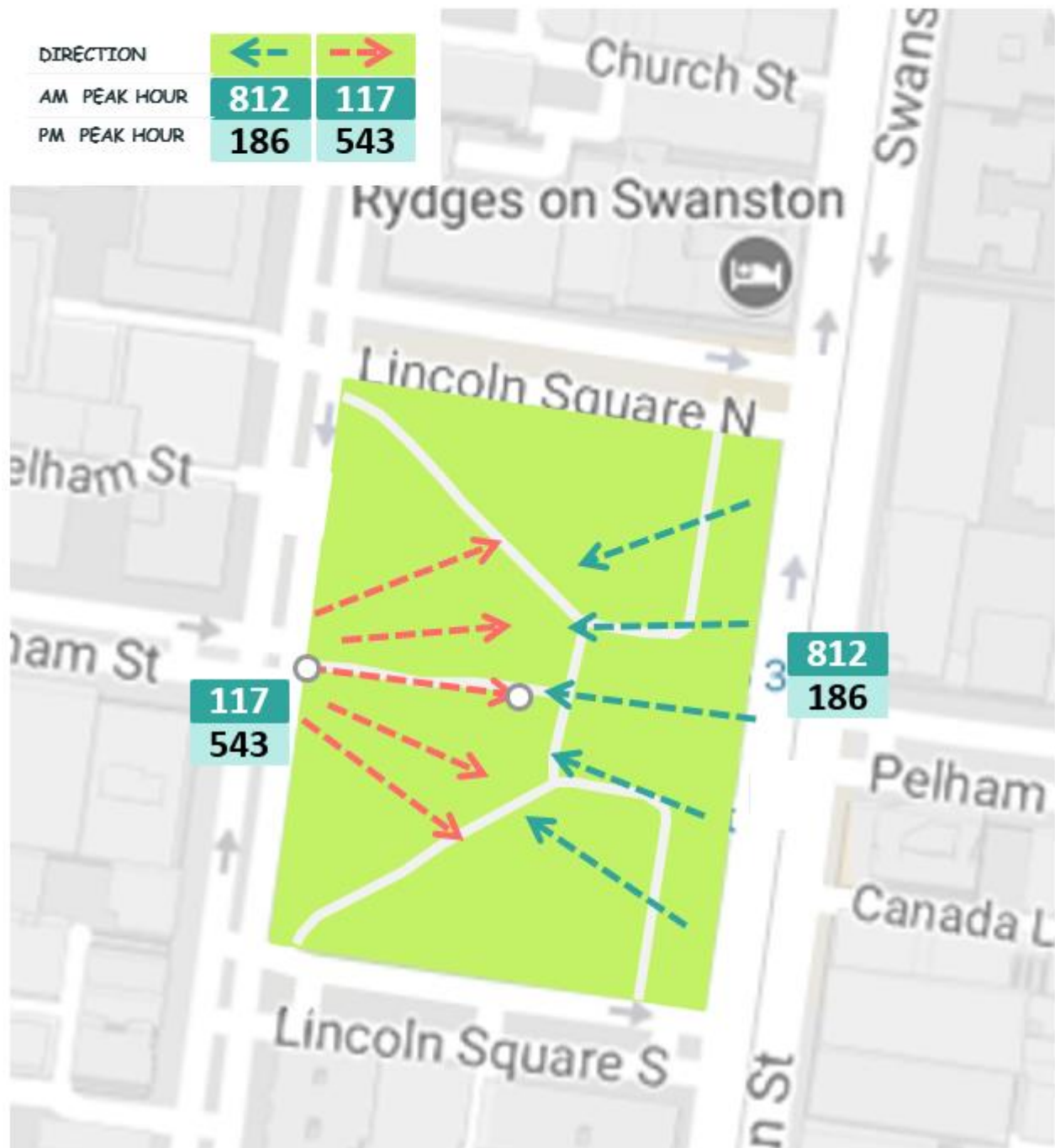


Figure 22: Peak Hour Pedestrian Movements Across Lincoln Square

6. CONCLUSION

6.1. SUMMARY

Based on the prevailing parking and traffic conditions identified around Lincoln Square during this study it is considered feasible to pursue open space enhancement opportunities in this area.

In particular, it is concluded that a targeted reduction in car parking supply is realistic (those components used for commuter parking purposes) as is the narrowing of the carriageway width on both Lincoln Square North and Lincoln Square South (whilst retaining two-way flow). These changes to traffic arrangements are not expected to cause adverse traffic impacts as both streets carry exceptionally low traffic volumes – most of which is simply ‘circulating’ looking for parking.

Notwithstanding the above, there are a number of other projects which have, or are about to result in car parking losses throughout Carlton (likely over 400 on-street spaces). Parking spaces around Lincoln Square will experience some increased demand, even before any additional parking losses required to accommodate an extension of this park. The other projects that will generate parking losses in the immediate area include:

- Queensberry Street – Traffic Capacity Increase: 109 spaces already removed
- University Square Park Expansion Project: 177 spaces to be removed in 2017
- Grattan Street – closure for Melbourne Metro construction: Approximately 80 spaces to be removed in 2017

Specific findings are discussed below.

6.2. PARKING

Overall, the parking surveys have shown that there is heavy demand for parking through the middle of a typical weekday. Specifically, the results of the parking surveys highlight the following:

- On weekdays, during normal business hours, the 287 parking spaces available to the public in the study area are most heavily utilised between around 10.00am and 3.00pm (over 80% occupied).
- After a marginal decrease in parking demand in the late afternoon, by 7.00pm there is once again high parking demand manifested in occupancies exceeding 80% (with many local workers having departed the high occupancy in the evening is principally the result of students from nearby Melbourne University attending evening classes).
- The high ‘middle-of-the-day’ parking occupancy is primarily associated with strong demand for the four-hour limit parking spaces – which represent nearly 45% of the publicly available spaces surveyed. Observations have revealed that users of these four-hour limit spaces are seeking medium to long term parking opportunities. Most are students from surrounding Melbourne University buildings as well as ‘local workers’ associated with the general commercial activity in the precinct.
- The two-hour limit parking spaces exhibit similar high occupancies as the four-hour limit spaces.
- In contrast to the high occupancy of the four-hour and two-hour limit spaces the one-hour parking spaces experience much lower occupancies throughout the day – though by 7.00pm occupancy rises above 80% (when the one-hour limit no longer applies) in common with the patterns observed in the four-hour and two-hour limit zones
- Early morning weekday parking demand is modest across all parking restrictions.
- The small number of parking spaces assigned for resident priority parking (14 half-hour limit spaces) were found to be servicing the needs of local residents adequately.

Importantly, the monitoring of the destinations of motorists (after parking near Lincoln Square) has indicated that very little of the parking demand manifested in this area is actually associated with users of the Lincoln Square park (most park visitors have actually been observed arriving on foot).

6.3. TRAFFIC

The traffic surveys have shown that both Lincoln Square North and Lincoln Square South are used by very low traffic volumes in peak hours on weekdays. Other than modest levels of 'legitimate' local traffic associated with access and the servicing of abutting properties, most of the traffic on these two streets is simply 'looking for parking' (often circulating multiple times during periods of heavy parking demand). Neither Lincoln Square North and Lincoln Square South experience any significant short-cutting by non-local traffic, except for the temporary spike in eastbound traffic caused by the closure of the northbound carriageway in Bouverie Street – which has forced northbound motorists to momentarily use Lincoln Square North and Lincoln Square South (in an eastbound direction). Monitoring revealed that almost all of these eastbound movements in each street were 'through' movements (travelling directly from Bouverie Street to Swanston Street). Only a very low number of the eastbound vehicles originated locally within Lincoln Square South or Lincoln Square North – from either on-street or off-street parking.

Thus, it is estimated that if Bouverie Street had been open, much of the eastbound traffic on Lincoln Square South and Lincoln Square North (likely to be 90-95%) would have remained on Bouverie Street and not used Lincoln Square South and Lincoln Square North.

In summary, other than a comparatively low number of vehicles accessing/servicing properties (including buses servicing the Rydges on Swanston hotel via Lincoln Square North) most of the motorists on these two streets are simply 'looking for parking' (whilst typically bound for destinations further afield). On this basis, there is no reason why a reconfiguration and narrowing of both streets should not be pursued.