

Majors Bay Road Business/Commercial Area

Parking Study and Assessment

Ref: 237/2019

Date: 20 November 2019

Issue: A

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1.0 Introduction

1.1 Introduction

The Majors Bay Road Business/Commercial Area Parking Study and Assessment (study) was undertaken by TTPA, as commissioned by the City of Canada Bay. The study was to assess the existing parking demand and to guide the provisions for the existing parking demand created by a range of existing developments proposed within and immediately adjacent to the Majors Bay Business/commercial area (subject site). The subject site is shown in Figure 1.1.

Figure 1.1: Subject Site



The study covers the following on-street and off-street parking spaces:

On-Street Parking

- ❖ Brewer Street between Spring Street and Majors Bay Road
- ❖ Wellbank Street between Warbrick Street and Cormiston Avenue
- ❖ Jellicoe Street between Warbrick Street and Majors Bay Road
- ❖ Gallipoli Street between Warbrick Street and Majors Bay Road
- ❖ Jones Street between End and Majors Bay Road
- ❖ Little Cormiston Avenue between Cormiston Avenue and Majors Bay Road
- ❖ Trafalgar Parade between Majors Bay Road and 17 Trafalgar Parade
- ❖ Davidson Avenue between Majors Bay Road and 17 Davidson Avenue
- ❖ Spring Street between Brewer Street and Wellbank Street
- ❖ Bent Street between End and Wellbank Street
- ❖ Warbrick Street between Wellbank Street and Gallipoli Street
- ❖ Cormiston Avenue between Shackel Avenue and Wellbank Street
- ❖ Majors Bay Road between Brewer Street and Correys Avenue

Off-Street Carpark

- ❖ Wellbank Street Carpark
- ❖ Brewer Street Carpark

The study area comprises of 597 parking spaces (58 off-street and 539 on-street spaces).

The area predominantly consists of retail/commercial and medium-density residential dwellings along Majors Bay Road and Wellbank Street and Brewer Street and low-density residential dwellings along Spring Street/Warbrick Street and Cormiston Avenue. Parking around the area is predominantly used for residents and visitors of the business/commercial area.

1.2 Objectives

The current parking demand is influenced by the local site and surrounding

developments and needs to accommodate the various local land use activities, current residential and commercial land uses as well as the number of residents and visitors. The study was to examine existing supply and demand for car parking, review the demand rates, develop and investigate options to address parking issues identified through the study of the current supply and demand of the off-street and on-street parking. The study was to measure, analyse, and present the existing parking characteristics within the study area in an efficient and cost-effective manner to make a thorough and compelling basis for decisions on parking issues by the Council. Since public support is vital to implement a parking strategy, the parking study needed to address the issues related to residents, businesses, and other users, which included:

- ❖ Maximise the use of the existing parking supply and its replacement for both residents and visitors
- ❖ Improve the trading of existing and future businesses within the subject site.
- ❖ Consider disabled parking needs.
- ❖ Encourage sustainable transport modes including walking and cycling, and public transport
- ❖ Encourage innovative sustainability initiatives such as car share schemes.
- ❖ Integrate parking management with land use planning and public transport.

The report also provides a strategic business case for the redevelopment of Council's Brewer Street Carpark to inform the cost-benefit for the provision of additional car parking spaces.

1.3 Report

This report includes the following sections:

- ❖ Introduction
- ❖ Existing conditions and survey results
- ❖ Parking demand and utilisations
- ❖ Recommended parking arrangements
- ❖ The strategic business case for multi-storey carpark

2.0 Parking Supply/Inventory

2.1 Parking Survey

Parking surveys were undertaken to establish the number of available spaces and the demand for parking within the study area. The surveys, undertaken at hourly intervals, recorded the number of potential parking spaces and their utilisation. The surveys were conducted at the following dates:

- ❖ Weekday – Wednesday, 25 September 2019 and Thursday, 26 September 2019 between 5 am to 10 pm. This survey aimed to determine the parking situation on a typical weekday with residents vacating parking spaces when driving to work in the morning, spaces being occupied by visitors to the area during the daytime and residents occupying parking spaces when returning from work in the evening.
- ❖ Weekend – Saturday, 19 October 2019 and Sunday 20 October 2019 between 8 am and 6 pm. The weekend survey aimed to determine the parking situation on a typical weekend. The surveys would provide an indication of the busiest streets during the weekend and provide guidance towards implementing a reasonable strategy.

2.2 Survey methodology

In order to maintain consistency throughout the survey data, surveyors assumed the number of parking spaces on the street was the maximum number of spaces which could legally fit within the area.

2.3 Parking Supply

The existing business/commercial area parking comprises largely of on-street public parking. The on-street parking provides a mixture of parallel and angled parking spaces depending on the available road width and adjoining roads and property accesses. There are also two off-street car parks, located to the southeast corner of Majors Bay Road/

Brewer Street intersection and south of Wellbank Street between Majors Bay Road and Cormiston Avenue, that provide some publicly accessible parking.

The on-street parking including a combination of short-term parking, as short as 10 and 30 minutes in some locations, medium-term parking (1-3 hours) and unrestricted (all day) parking. Generally, the all-day parking is located further away from the minor street areas of the business/commercial area along Davidson Avenue, Cormiston Avenue, Little Cormiston Avenue, Jones Street, Gallipoli Street, Jellicoe Street, Warbrick Street, Spring Street, and Bent Street.

1 car share space is available on the northwestern corner of Majors Bay Road/Wellbank Street intersection.

7 disabled spaces are available at the following locations:

- ❖ 1 space within the Brewer Street Carpark
- ❖ 3 spaces on Majors Bay Road (2 spaces between Trafalgar Parade and Wellbank Street and 1 space between Wellbank Street and Jellicoe Street)
- ❖ 1 space on Jellicoe Street east of Majors Bay Road
- ❖ 2 spaces on Davidson Avenue west of Majors Bay Road

The parking supply and restrictions of the study area surveyed are illustrated in Figures 2.1A and 2.1B. A summary of the parking supply and restrictions is provided in Appendix A.

Details of these surveys are provided in Appendix B.

The distribution of the car parking restrictions is summarised in Table 2.1 and provided in Figure 2.2.



10MIN 7:00am - 9:30am 2:30pm - 3:30pm

1/2P 8:30am - 6:00pm MON - FRI; 1/2P 8:30am - 12:30pm SAT

1P 8:30am - 6:00pm All Days


1P 8:30am - 6:00pm MON - FRI; 1P 8:30am - 12:30pm SAT

2P 8:30am - 6:00pm All Days

2P 8:30am - 6:00pm MON - FRI; 2P 8:30am - 12:30pm SAT

3P 8:30am - 6:00pm MON - FRI; 3P 8:30am - 12:30pm SAT

No Restriction

 Disabled

 GO GET

Figure 2.1A

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Existing Car Parking Supply and Restrictions

DRAWING REF NO. 237/2019/01

ISSUE C

ISSUE DATE 6/12/2019

DESIGNED BY
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REVIEWED BY
M. KONG

SCALE
A3

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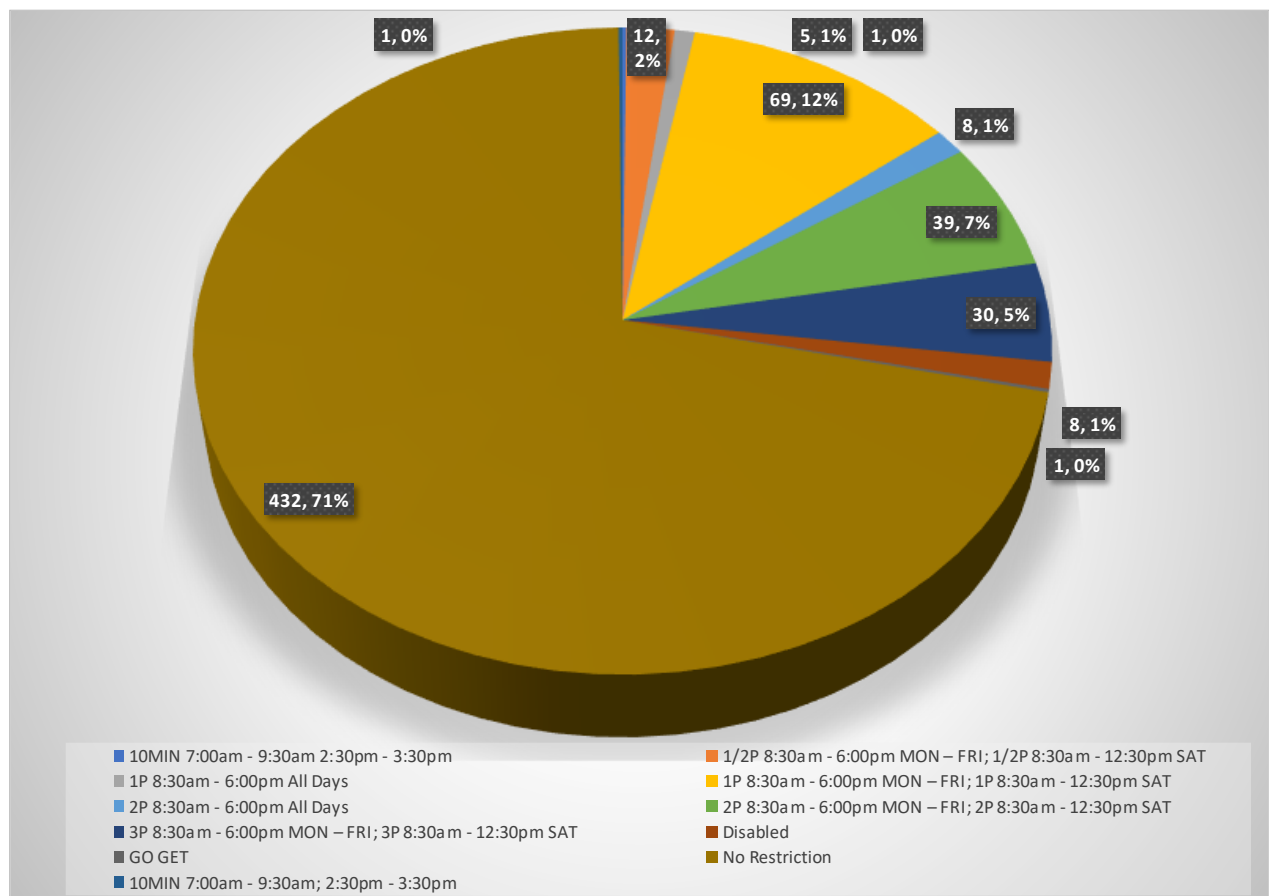
- | | | |
|---|---|----------|
| — 10MIN 7:00am - 9:30am 2:30pm - 3:30pm | — 2P 8:30am - 6:00pm All Days | Disabled |
| — 1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT | — 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT | GO GET |
| — 1P 8:30am - 6:00pm All Days | — 3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT | |
| — 1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT | — No Restriction | |

Figure 2.1B

Table 2.2. Parking Supply by Type of Restrictions

Car Parking Restrictions	No. of Spaces
10MIN 7:00am - 9:30am 2:30pm - 3:30pm	1
1/2P 8:30am - 6:00pm Mon - Fri; 1/2P 8:30am - 12:30pm SAT	12
1P 8:30am - 6:00pm All Days	5
1P 8:30am - 6:00pm Mon - Fri; 1P 8:30am - 12:30pm SAT	70
2P 8:30am - 6:00pm All Days	8
2P 8:30am - 6:00pm Mon - Fri; 2P 8:30am - 12:30pm SAT	40
3P 8:30am - 6:00pm Mon - Fri; 3P 8:30am - 12:30pm SAT	30
Disabled	7
GO GET	1
No Restriction	423

Figure 2.2. Parking Supply by Type of Restrictions





Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- ≥85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1A(i)

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Existing Peak Parking Occupancy (WEDNESDAY)

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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- >=85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1A(ii)

MAJORS BAY ROAD PARKING STUDY AND
ASSESSMENT
Existing Peak Parking Occupancy (WEDNESDAY)

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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- >=85% - 99%
- 100%

Disabled

GO GET

Figure 3.1B(i)

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Existing Peak Parking Occupancy (THURSDAY)

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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- >=85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1B(ii)

MAJORS BAY ROAD PARKING STUDY AND
ASSESSMENT
Existing Peak Parking Occupancy (THURSDAY)

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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- ≥85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1C(i)

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Existing Peak Parking Occupancy (SATURDAY)

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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- >=85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1C(ii)

MAJORS BAY ROAD PARKING STUDY AND
ASSESSMENT
Existing Peak Parking Occupancy (SATURDAY)

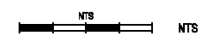
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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- ≥85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1D(i)

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Existing Peak Parking Occupancy (SUNDAY)

DRAWING REF NO. 237/2019/01

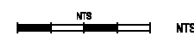
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Peak Occupancy

- <50%
- 50% - 75%
- 75% - 85%
- >=85% - 99%
- 100%

 Disabled

 GO GET

Figure 3.1D(ii)

MAJORS BAY ROAD PARKING STUDY AND
ASSESSMENT
Existing Peak Parking Occupancy (SUNDAY)

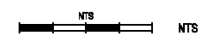
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3.0 Parking Demand/Occupancy

3.1 Peak Parking Occupancy

It is noted that these peaks do not coincide but create a picture of the occupancy observed on-street in the business/commercial area.

The peak parking occupancy are illustrated in Figure 3.1A (Wednesday), Figure 3.1B (Thursday), Figure 3.1C (Saturday) and Figure 3.1D (Sunday).

A summary of the peak parking occupancy based on road and restrictions is provided in Appendix C while the parking occupancy profiles of on each road are shown in Appendix D.

Occupancy profiles for all parking spaces (unrestricted and restricted) on Wednesday, Thursday, Saturday and Sunday are illustrated on Figure 3.1A. The data shows that occupancy rates for most streets in the business/commercial area increases after 8 am and reduces after 6 pm (on Wednesday) and after 8 pm (on Thursday) during the weekdays and increases after 10 am and reduces after 3pm (on Saturday and Sunday). These indicate that these streets cater mostly to the visitors' parking demand in the business/commercial area.

The parking occupancy profiles for restricted spaces for the nominated surveyed days are presented on Figure 3B.

The profiles indicate:

- Wednesday: More than 85% occupancy between 1.30pm and 2.30pm with maximum occupancy of 87%
- Thursday: More than 85% occupancy between 10am and 1pm with maximum occupancy of 99%

- Saturday: More than 85% occupancy between 9.30pm and 2.30pm with maximum occupancy of 91%
- Sunday: More than 85% occupancy between 10.30pm and 1.30pm with maximum occupancy of 91%

In practice, vehicles are often parked with gaps greater than required for pulling out of a parking space. Drivers generally perceive that a carpark is full when it has reached over 85% capacity and often will not enter the car parking area even though spaces are available. An 85% capacity usage has also been found to be the point at which a driver seeking a parking space can find one with only a short search. Therefore, it can be assumed that full capacity is reached when parking occupancy is over 85%.

Based on the above, the restricted spaces within the Majors Bay Road Commercial/Business area are being well utilised and expansion of these restrictions is warranted.

Figure 3.1A. Overall Parking Occupancy Profiles (%) on Wednesday, Thursday, Saturday and Sunday

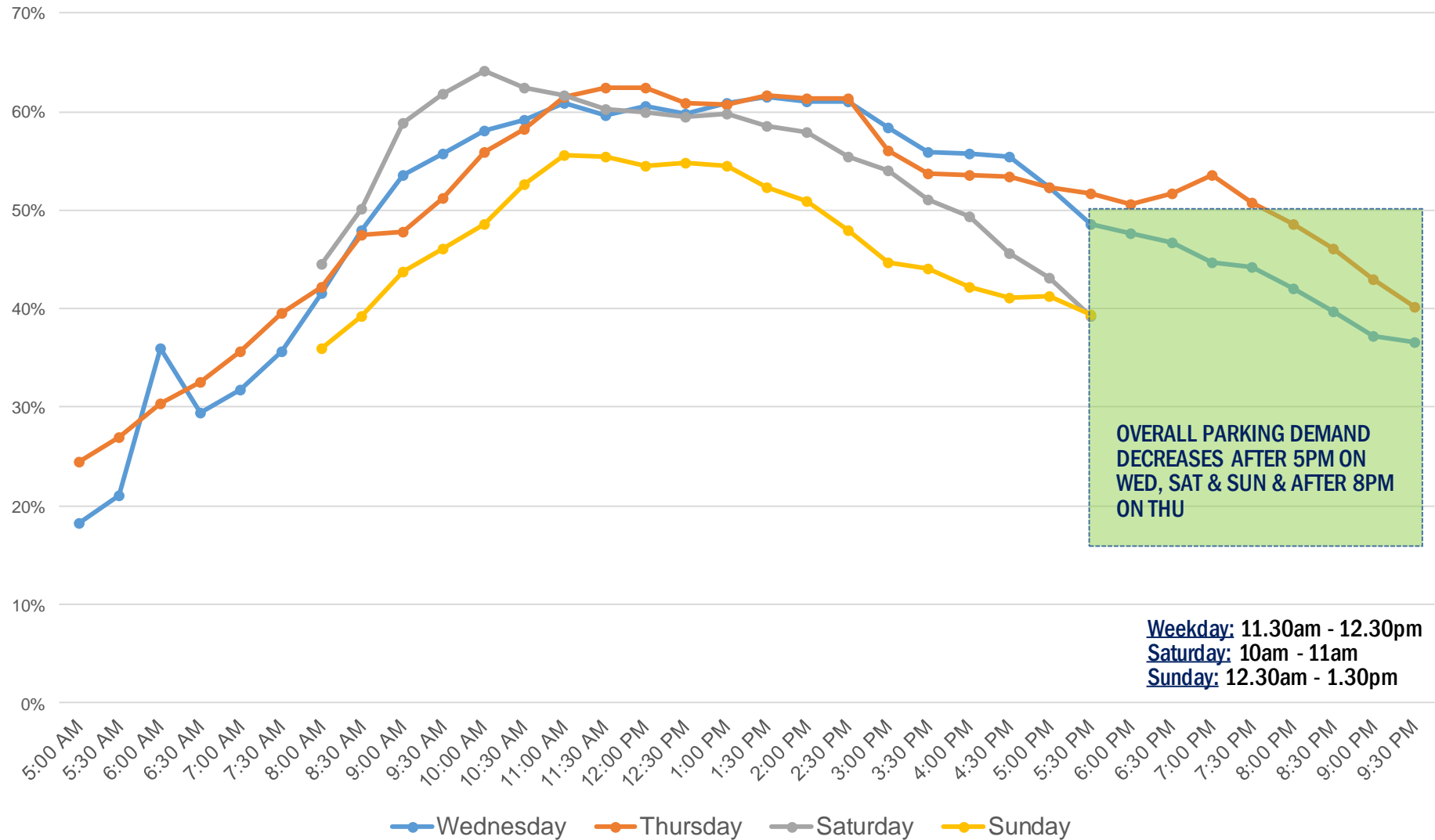
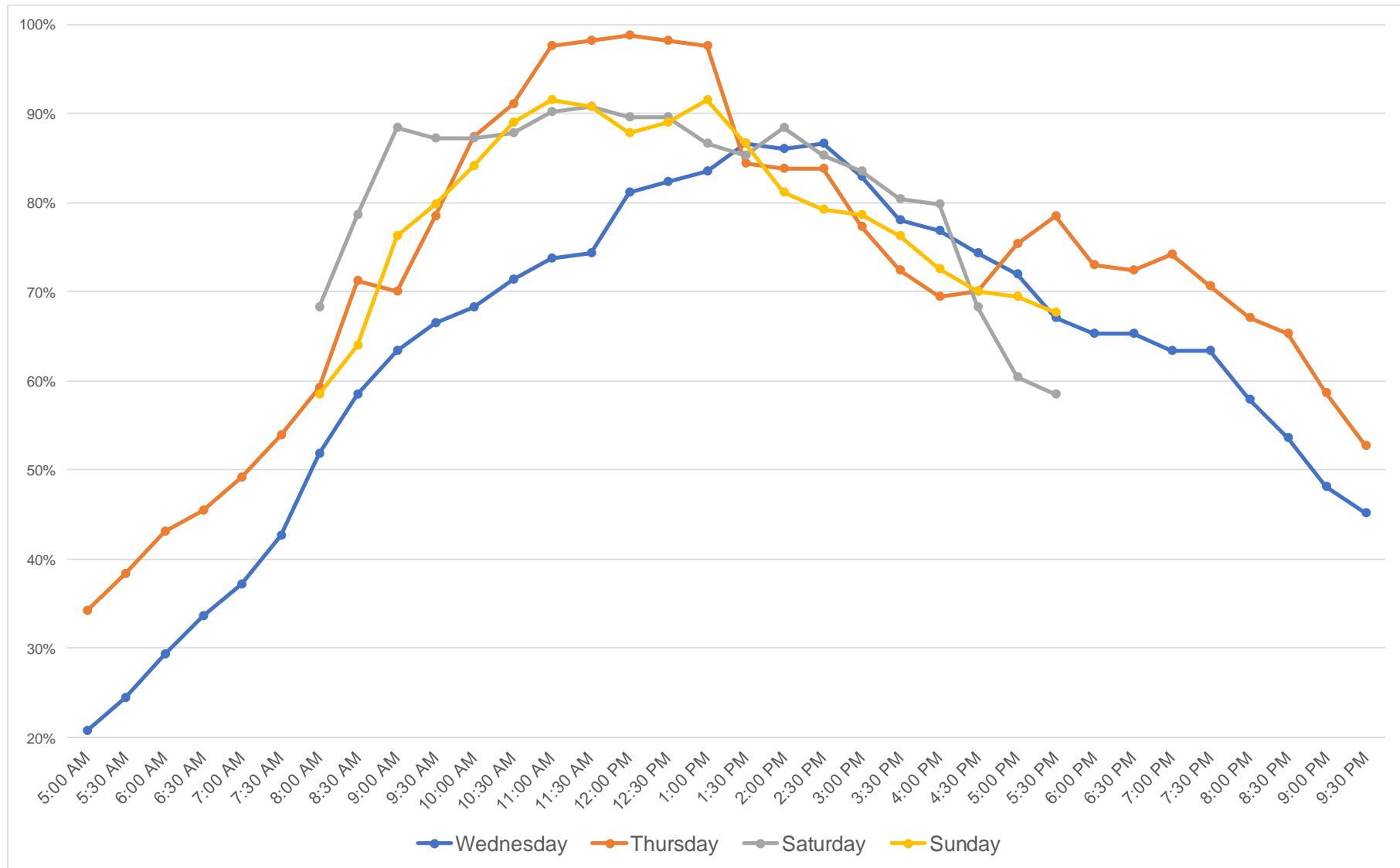


Figure 3.1A. Restricted Parking Occupancy Profiles (%) on Wednesday, Thursday, Saturday and Sunday



3.2 Peak-Hour Parking Occupancy

Based on the Table 3.1, it is identified that the peak periods occur during the following time:

- Wednesday and Thursday: Between 11.30am and 12.30pm
- Saturday: Between 10am and 11am
- Sunday: Between 12.30am and 1.30pm

Table 3.1. Parking Occupancy Profile (%) on Wednesday, Thursday, Saturday and Sunday

Day	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
Wed	51.9%	67.4%	72.2%	76.5%	76.5%	75.2%	74.7%	72.2%	70.7%	66.4%
Thu	52.2%	59.2%	69.1%	78.3%	78.7%	76.2%	77.5%	70.2%	68.4%	66.9%
Sat	55.5%	72.9%	79.5%	77.4%	74.9%	75.2%	72.6%	68.8%	63.1%	54.9%
Sun	45.5%	53.7%	60.8%	67.4%	66.8%	68.6%	64.3%	57.5%	55.0%	52.9%

The parking occupancy by type of restrictions during the peak hour for each day were investigated and summarised in Table 3.2. A summary of parking occupancy during the peak hour by roads and restrictions are provided in Appendix E.

Table 3.2. Peak-Hour Parking by Type of Restrictions

Restrictions	Capacity	Peak-Hour Occupancy							
		Wednesday		Thursday		Saturday		Sunday	
		No	%	No	%	No	%	No	%
10-Minute	1	1	100%	1	100%	1	100%	1	100%
1/2P	12	12	100%	12	100%	11	92%	12	100%
1P	75	66	88%	73	97%	63	84%	73	97%
2P	48	38	79%	43	90%	29	60%	45	94%
3P	30	29	97%	30	100%	15	50%	29	97%
Disabled	7	5	71%	7	100%	6	86%	7	100%
GO GET	1	1	100%	1	100%	1	100%	1	100%
NR	423	303	72%	309	73%	212	50%	248	59%
Total	597	455	76%	476	80%	338	57%	416	70%

The general impression of the peak occupancy of public parking is summarised as follows:

- ❖ Only 80% of the unrestricted spaces are occupied.
- ❖ The unrestricted parking along Brewer Street, Wellbank Street, Jellicoe Street, Spring Street, Bent Street and Gallipoli Street which are near the commercial/business premises, show increased in occupancy profile between 11 am and 2pm, indicating that these spaces are used for short-term parking.
- ❖ The unrestricted on-street spaces along Jones Street, Little Cormiston Avenue, Cormiston Avenue, and Warbrick Street away from the business/commercial area are less intensively used.
- ❖ The short- (10-minute and ½ P) and medium-term (1P, 2P and 3P) as well as disabled space are fully utilised during the peak periods. These spaces which are close to commercial/business premises are very intensively used.
- ❖ The survey data also shows that occupancy rates are generally higher at between 11 am and 2pm, suggesting that these spaces are used for short term parking, from patrons to shops along Majors Bay Road.
- ❖ Late night shopping day on Thursday have similar car parking demand than the demand on Wednesday due to the lack of large retail development in the business/commercial area.
- ❖ Parking occupancy rates over weekdays and Sunday are higher (70%-80%) as compared to Saturday (57%).

Streets with 85% or higher occupancy over the survey period provides a clear indication of streets that need further investigations and possible change of parking restrictions and provisions.

The following streets were found to fit this criterion during the weekdays:

- ❖ Jellicoe Street - 2P and Disabled
- ❖ Brewer Street Carpark - 10-Minute, 2P, 3P and Disabled
- ❖ Majors Bay Road - 1/2P, 1P and Disabled
- ❖ Trafalgar Parade - 2P

- ❖ Wellbank Street - 1P and 3P

The following streets were found to fit this criterion during the weekend:

- ❖ Brewer Street - 1P
- ❖ Jellicoe Street - 2P and Disabled
- ❖ Brewer Street Carpark - 10-Minute, 2P, 3P and Disabled
- ❖ Majors Bay Road - 1/2P, 1P and Disabled
- ❖ Trafalgar Parade - 2P
- ❖ Wellbank Street Carpark - 2P
- ❖ Wellbank Street - 1P and 3P

The proposed change of car parking restrictions to address the highly occupied parking spaces are presented in Section 5 of the report.

4.0 Community Engagement

4.1 Introduction

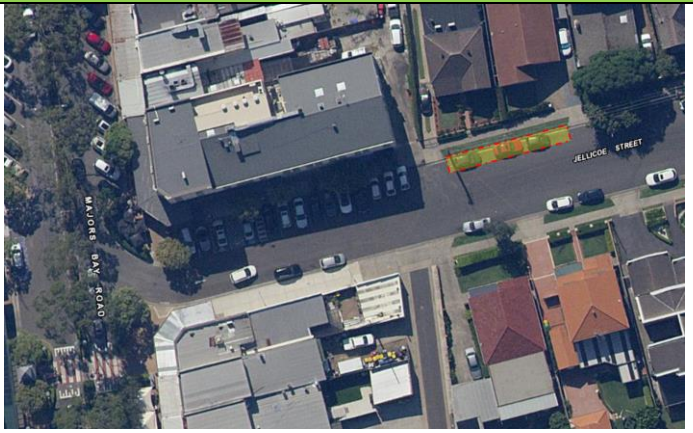
As part of the Majors Bay Road Place Plan, stakeholder and community engagement activities were completed in 20 August 2019. The participants submitted their ideas/suggestions for the business/commercial area. The following details the parking-related community responses:

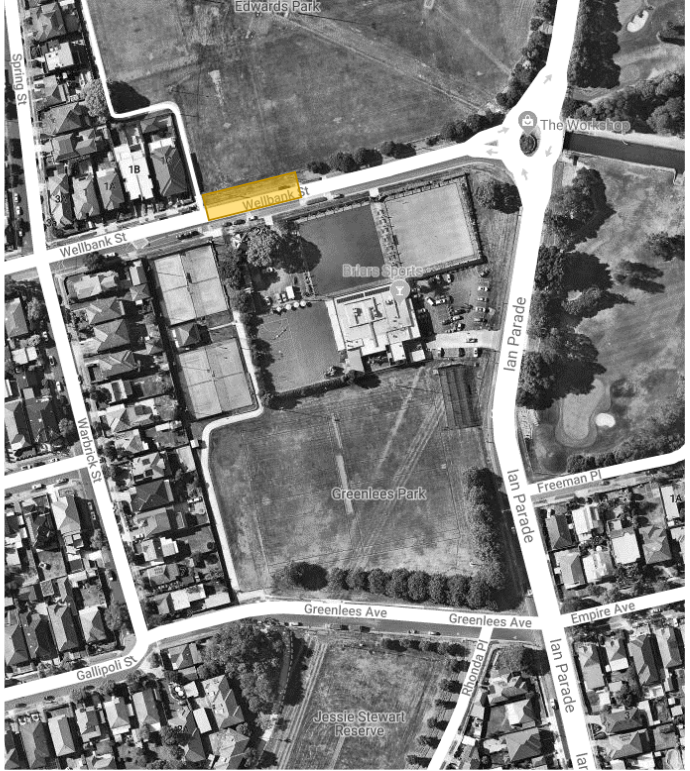
4.2 Community's Ideas for Traffic Management and Proposed Solutions


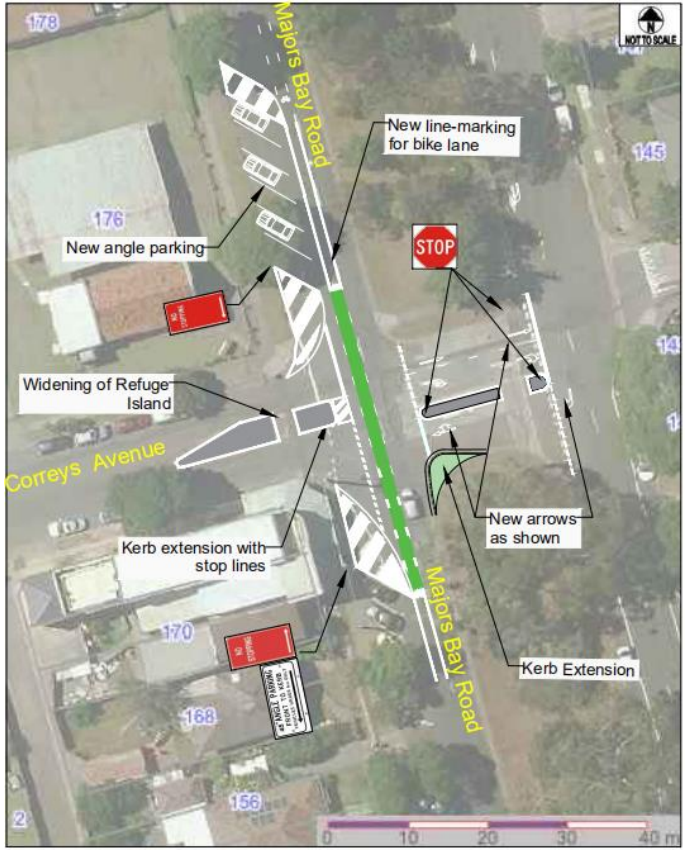
The following details the community's transport and traffic-related ideas and associated TTPA's proposed mitigation measures. The key messages from the consultation with the community were reviewed to inform the proposed car parking strategy.

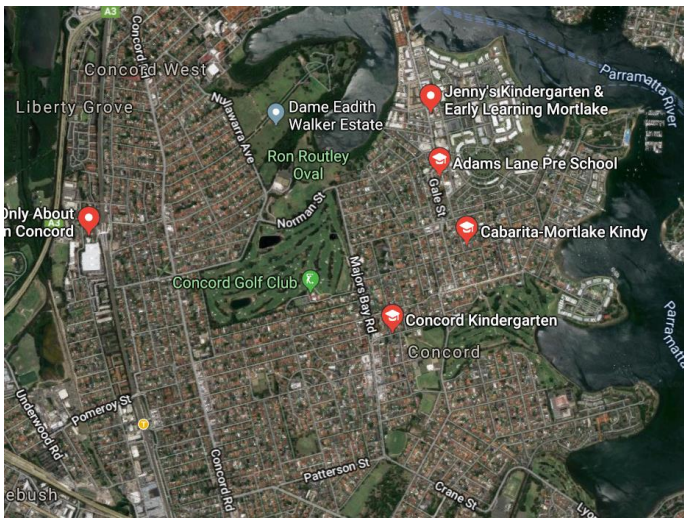
Ideas/Suggestions made by the Community

No.	Idea	Proposed Mitigation Measures
1	Create a multi-level car park at Brewer Street – suggestion: staff from local businesses should be able to park at a newly created Brewer Street carpark freeing up parking around the retail precinct for business owners.	See Section 6 for business case for multi-level carpark at Brewer Street. With the conversion of the on-street parking around the retail precinct to short-term and medium-term parking, long-term on-street parking by staff can be accommodated by the remaining unrestricted spaces while the nearby on-street spaces will serve the precinct.
2	Create more parking at Jellicoe Street with possibility of angled parking	Convert existing unrestricted 3 parallel spaces along Jellicoe Street (northern edge) east of Majors Bay Road to 7 – 90-degree spaces (subject to road widening) with 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT restrictions. See the following figure. This will require widening of the roadway by approximately 1m.

No.	Idea	Proposed Mitigation Measures
		
3	Encourage business owners and employees to park further away.	See response to Item 1. Council to consult with business owner on ways to encourage staff/employees to park outside of the retail precinct and provide indicative parking locations where there are availabilities of unrestricted on-street spaces
4	Add in 15-minute parking at key businesses in peak times. Peak times suggested as: <ul style="list-style-type: none"> - Weekdays: 8.30 – 10.00am - Weekdays: after 3pm - Saturday: all day (due to sports in the area, people park all day) - Sunday: from 11am 	See Section 5 for proposed 2 spaces within Brewer Street Carpark for 1/4 8:30am - 6:00pm ALL DAYS restrictions. It is also proposed to convert 14 spaces along Majors Bay Road to 1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT.
5	Create additional parking around Edwards Park as the overflow ends up on and around Majors Bay Road.	Council to review the provision of 90-degree parking spaces south of Edward Park along the northern edge of Wellbank Street between Ian Parade and Warbrick Street. See the following figure.

No.	Idea	Proposed Mitigation Measures
		 <p><i>Note: Drainage and stormwater are key constraints within the suggested location due to being a relative low point.</i></p> <p>Council to review the provision of free-shuttle services with stops on the major origin and destination points and along the external perimeter of the business area to encourage the use of public transport and on-street parking away from Edwards Park during special events. Transport Access Guide to be provided on Council's and event's website to inform visitors of active transport provision within the area.</p>
6	At Trafalgar Parade and any similar side streets use line marking to create more spaces – currently people may take up one space which two cars could fit in.	Installation of parallel parking bay linemarking generally does not increase parking efficiency. This is due to the relevant Australian Standards which are designed to accommodate a wide range of vehicle sizes.
7	Look at the possibility of creating extra parking at Greenlees Park and Rothwell Park - suggestion to use angled parking	Additional parking study to be completed within 200m walking distance of Greenlees Park and Rothwell Park during special events. Council to review the provision of 90-degree parking spaces (subject to road widening) along the northern edge of Greenlees Avenue west of Ian Parade. This will require widening of the roadway by approximately

No.	Idea	Proposed Mitigation Measures
		<p>1m. See the following figure.</p> <p><i>Note: Drainage and stormwater are key constraints as there are large stormwater inlets in Greenlees Avenue within the suggested location due to being a relative low point.</i></p> 
8	<p>Create more angled parking at Prince Henry Place gardens (northern end of MBR)</p>	<p>Council to convert 3 parallel “No Parking” zone spaces to 6 45-degree unrestricted angled car parking spaces along Majors Bay Road (western edge) north of Correys Avenue. See the following figure.</p> 

No.	Idea	Proposed Mitigation Measures
9	Use smart parking with sensor parking trial in the area	Council to investigate installation of parking sensor technology as part of an integrated parking solution to ensure parking compliance within the specified hours. Such method has been proven successful for the Marlborough Street Carpark in Drummoyne Commercial/Business Area
10	Change from parallel parking on Jellicoe Street between Majors Bay Road and Gallipoli Lane to 60-degree angled parking might provide additional spaces	Council to assess the possible conversion from 3 parallel unrestricted spaces to 7 90-degree angled car parking spaces with the following restrictions - 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT, along the northern side of Jellicoe Street just to the west of Gallipoli Lane (subject to road widening). Refer to Point 2.
11	Look at all private parking in the area and see if there is any availability for public parking e.g. in local developments. One example cited was the Concord Commercial Centre which has private visitor parking on one of its levels.	Not recommended – no rules or acts have been established to protect both users and tenants in terms of damages or liabilities
12	Relocate the kindergarten on Brewer Street to create a parking centre through a Private Public Partnership	<p>Council to review such opportunities when the childcare centre site is being redeveloped. At the moment, kindergarten site is the only centre serving the Majors Bay Road Business Area. See the following figure.</p> 

Feedbacks on the Traffic Flow and Parking by the Community

No.	Idea	Proposed Mitigation Measures
1	<p>The increase in food delivery drivers has led to more electric bikes and motorbikes</p> <p>Suggestion: Not allow these drivers to take up a full parking spot</p> <p>People take their purchasing power to Rhodes Waterside as they see Majors Bay Road as a hard place to park</p>	<p>Council to discuss with food delivery companies to advise their staff/employees to not occupy the entire angled space and to park in a way to allow another motorbike or electric bike to park next to it.</p>
2	<p>Traffic flow to cross into Correys Avenue is hard as people shortcut down Davidson Avenue and getting across where Blade and Barrel (174 MBR) is impossible as people park right on the corner.</p>	<p>Council to review the location of the existing No Stopping zone and to enforce this zone. It is understood that Council is investigating road safety enhancements in this area as indicated in the image against point 8 in the previous section.</p>
3	<p>Difficulty for local people parking during peak times.</p>	<p>See Section 5 for proposed car parking arrangement to increase parking turnover and availability of on-street spaces.</p>
4	<p>People suggested the times below were the peak times in Majors bay Road and surrounds:</p> <ul style="list-style-type: none"> - Weekdays: 8.30 – 10.00am - Weekdays: after 3pm - Saturday: all day (due to sports in the area, people park all day) - Sunday: from 11am 	<p>Refer to Point 3.</p>
5	<p>Need more loading zones in Jellico Street</p>	<p>The proposed increase of 1P spaces along Jellicoe Street allows for higher turnover of parking spaces including service vehicles</p>
6	<p>Fix the parking in the area before a Piazza is installed</p>	<p>See Section 5 for proposed parking arrangement.</p>
7	<p>We need a solution to the increased parking in the area –</p>	<p>See Section 5 for proposed car parking arrangement to increase parking turnover and availability of on-street</p>

No.	Idea	Proposed Mitigation Measures
	Suggestion: Run a shuttle bus from the Golf Club through Majors Bay Road so people could park further away and get a shuttle bus to the precinct.	spaces. Council to review the provision of free-shuttle services with stops on the major origin and destination points and along the external perimeter of the business area to encourage the use of public transport and on-street parking away from the precinct during special events.
8	<p>A concern was raised that more residents are arriving into the area with current and new developments but there has not been an equivalent rise in parking availability Suggestion: Cap the number of eateries in the area as even small cafes generate a lot more cars but don't need to provide extra parking.</p> <p>Look at providing an increase in building heights with an increased building height incentive to increase angled parking from laneways behind business (this would need 2-3 buildings to come together).</p> <ul style="list-style-type: none"> - Do not put parking meters into the village as it will turn into Norton Street. The parking rangers do a great job. 	<p>Council's DCP specifies various minimum and maximum parking rates depending on the nature of where a property is located. Maximum parking provisions are designed to encourage lower car usage and higher usage of public and active transport. Such provisions are considered appropriate for this area. See Section 5 for proposed car parking arrangement to increase parking turnover and availability of on-street spaces.</p> <p>Council to investigate installation of parking sensor technology as part of an integrated parking solution to ensure parking compliance within the specified hours. Such method has been proven successful for the Marlborough Street Carpark in Drummoyne Commercial/Business Area.</p> <p>Council to also continue to provide parking rangers for the proposed parking arrangements in the future to ensure compliance.</p>



5.0 Proposed Parking Arrangements



Based on the parking survey and feedbacks from the community consultation, TTPA developed change in parking restrictions to accommodate the demand of the business/commercial area with negligible impact on the residential on-street parking. These recommendations are summarised in Table 5.1 and illustrated in Figures 5A and 5B. The future car parking arrangements with the above changes are illustrated in Figures 6A and 6B.

Table 5.1. Proposed Change in Parking Restrictions

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
1	Brewer Street (northern edge) east of Majors Bay Road		Unrestricted	1P 8:30am - 6:00pm All Days	1
2	Brewer Street (northern edge) west of Spring Street		Unrestricted	3P 8:30am - 6:00pm MON – FRI; 3P 8:30am a- 12:30pm SAT	5

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
3	Brewer Street (southern edge) west of Spring Street		Unrestricted	3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT	10
4	Brewer Street Carpark		1 disabled space and 1- 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT space	Disabled	Convert 1 disabled space and 1 standard space to 2 disabled spaces with 1 shared area

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
5	Brewer Street Carpark		3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT	2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT and 1/4 8:30am - 6:00pm ALL DAYS	26 spaces with 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT and 2 spaces with 1/4 8:30am - 6:00pm ALL DAYS
6	Davidson Avenue (southern edge) west of Majors Bay Road		Unrestricted and non-compliant disabled bay	2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT and disabled space	11 spaces with 2P 8:30am- 6:00pm MON-FRI; 2P 8:30am – 12:30pm SAT and 1 disabled space and 1 shared area



No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
7	Majors Bay Road (western edge) south of Davidson Avenue		Unrestricted	1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	2
8	Majors Bay Road (western edge) south of Trafalgar Parade		1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT	7

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
9	Trafalgar Parade west of Majors Bay Road		Unrestricted	2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT	7 spaces
10	Wellbank Street west of Majors Bay Road		Unrestricted	1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	6 spaces

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
11	Majors Bay Road (eastern edge) north of Jellicoe Street		1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT	9
12	Jellicoe Street (southern edge) east of Majors Bay Road		No Parking	1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	4 (Subject to road widening to create additional parallel parking)

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
13	Jellicoe Street (northern edge) east of Majors Bay Road		2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT	1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT and Disabled spaces	Convert 5 spaces from 2P to 1P. Council to investigate the addition of at least 1 more disabled parking space with a shared area
16	Jellicoe Street (northern edge) east of Majors Bay Road		Unrestricted	2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT	3 parallel spaces to 7 – 90-degree spaces (subject to road widening)

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
17	Jellicoe Street (southern edge) east of Majors Bay Road		Unrestricted	2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT	4 spaces
18	Gallipoli Street (northern and southern edges) east of Majors Bay Road		Unrestricted	1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	8 spaces

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces
19	Wellbank Street (southern edge) east of Majors Bay Road		Unrestricted	1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT	4
20	Bent Street (eastern edge) east of Majors Bay Road		Unrestricted	2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT	4
21	Majors Bay Road (western edge) between Correys Avenue and Links Avenue		No Parking	Unrestricted 45-degree angled parking spaces	3 parallel spaces to 6 45-degree spaces

No.	Description	Location Map	Existing Restrictions	Proposed Restrictions	Number of Spaces



- | | | |
|--|---|----------|
| — 10MIN 7:00am - 9:30am 2:30pm - 3:30pm | — 2P 8:30am - 6:00pm All Days | Disabled |
| — 1/4P 8:30am - 6:00pm ALL DAYS | — 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT | GO GET |
| — 1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT | — 3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT | |
| — 1P 8:30am - 6:00pm All Days | — No Restriction | |
| — 1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT | | |

Figure 6A

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Proposed Car Parking Supply and Restrictions

DRAWING REF NO. 237/2019/01

ISSUE A

ISSUE DATE 6/12/2019

DESIGNED BY
L. ELLISON

REVIEWED BY
M. KONG

SCALE
A3

NTS
NTS



ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

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- | | | |
|---|---|----------|
| — 10MIN 7:00am - 9:30am 2:30pm - 3:30pm | — 2P 8:30am - 6:00pm All Days | Disabled |
| — 1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT | — 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT | GO GET |
| — 1P 8:30am - 6:00pm All Days | — 3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT | |
| — 1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT | — No Restriction | |

Figure 6B

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT

Proposed Car Parking Supply and Restrictions

DRAWING REF NO. 237/2019/01

ISSUE C ISSUE DATE 6/12/2019

DESIGNED BY
L. ELLISON

REVIEWED BY
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- | | |
|--|---|
| — 10MIN 7:00am - 9:30am 2:30pm - 3:30pm | — 2P 8:30am - 6:00pm All Days |
| — 1/4P 8:30am - 6:00pm ALL DAYS | — 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT |
| — 1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT | — 3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT |
| — 1P 8:30am - 6:00pm All Days | — No Restriction |
| — 1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT | |

 Disabled

 GO GET

Figure 5A

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT
 Proposed Changes in Car Parking Supply and Restrictions
 DRAWING REF NO. 237/2019/01 ISSUE A ISSUE DATE 6/12/2019

DESIGNED BY
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- | | | |
|---|---|----------|
| — 10MIN 7:00am - 9:30am 2:30pm - 3:30pm | — 2P 8:30am - 6:00pm All Days | Disabled |
| — 1/2P 8:30am - 6:00pm MON – FRI; 1/2P 8:30am - 12:30pm SAT | — 2P 8:30am - 6:00pm MON – FRI; 2P 8:30am - 12:30pm SAT | GO GET |
| — 1P 8:30am - 6:00pm All Days | — 3P 8:30am - 6:00pm MON – FRI; 3P 8:30am - 12:30pm SAT | |
| — 1P 8:30am - 6:00pm MON – FRI; 1P 8:30am - 12:30pm SAT | — No Restriction | |

Figure 5B

MAJORS BAY ROAD PARKING STUDY AND ASSESSMENT
 Proposed Changes in Car Parking Supply and Restrictions
 DRAWING REF NO. 237/2019/01 ISSUE C ISSUE DATE 6/12/2019

DESIGNED BY L. ELLISON REVIEWED BY M. KONG
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6.0 Business Case for Brewer Street Multi-Storey Carpark

A high-level financial feasibility assessment has been completed for the construction of a multi-storey carpark within the existing Council's Brewer Street Carpark. See the following figure.



The following assumptions are made for the purpose of the assessment:

- the proposed Brewer Street carpark will be a maximum of 3 levels consistent with the adjacent buildings.
- The number of car parking space provided is calculated based on 1 space per 33m².

Riders Digest 2019 indicates the low and high ends of current building costs for open deck multi-storey carpark in Sydney. The costs considered items specifically included are those normally contained in a Building Contract with the following exclusions:

- Goods and Services Tax (GST)
- Land
- Legal and professional fees
- Loose furniture and fittings
- Site works and drainage
- Subdivisional partitions in office buildings
- Telstra and private telephone systems (PABX)
- Tenancy works

The lowest cost is \$810/m² while the highest cost is \$1,240/m².

The Pricing Model Car Parking spreadsheets provided by the Department of Transport - Government of Western Australia, assess customised and specific project costs and return for parking and show the value in undertaking travel behaviour management to reduce demand for parking. The model has been created as a tool to assist planners in their assessment of required pricing strategies associated with the construction of new car parks. Based on the input data (i.e., construction costs, survey, design, supervision costs, finance charges, operating and maintenance costs, future revenue), the tool will:

- calculates construction, operation and maintenance costs
- calculates car park revenue including existing revenue where appropriate, i.e., in areas with existing parking
- calculates the revenue of the carpark operations

The following assumptions have been made for the proposed multi-storey carpark operations:

- An hourly fee of \$2.50 as provided in Kur-ring-gai Council and Newcastle City

- The carpark is accessible 24/7 with 2P parking restrictions between 8.30 am – 6 pm Monday to Saturday. Outside these hours the car park is available free of use
- Average turnover of 2-hours
- 5.5 days per week
- 49 weeks per year

The costs and revenues of the proposed car park are provided in Table 6.1, with the detailed calculations included in Appendix F.

Table 6.1. Cost and Revenue Calculation for the Brewer Street Multi-storey Carpark

Item	Description
Site Area (m ²)	1,500
Number of Bays (Based on 1 space per 33m ² and 3 levels)	135
Construction Costs	\$3,979,800 (low) - \$6,088,500 (high): \$5,034,150 (average)
Annual Maintenance Costs	\$27,000 (low) - \$54,000 (high): \$40,500 (average)
Annual Repayment (Finance Costs)	\$ 450,399.24 (average)
Annual Revenue	\$545,738
Annual Difference (Revenue – Costs)	\$54,838 (average)
Return on Investment (ROI)	1.09%

The proposed multi-storey carpark has a high level of risk in both the capital costs and income projections, given that there are remaining unrestricted car parking spaces. With the housing market slowly rebounding, the construction costs will also increase in the near future.

The ASX/Russell Investments report indicates the following gross returns per annum over 10 years:

- Australian bonds: 5.2%
- Australian shares: 4%
- Cash: 3.6%

As such, an ROI of 1% will not represent a good investment.

Other options such as maintaining at-grade parking and construction of an underground carpark would be at an even higher construction costs and hence worse ROI. Improved viability may be possible where a basement carpark is coupled with commercial/residential uses above along with consolidation with surrounding private properties.

If notwithstanding the financial viability issues previously outlined the provision of additional parking were to be further considered, investigations would be required into the potential impacts such as increased traffic particularly on already constrained intersections and on urban design outcomes.

Taking account of the assessment above, it is recommended that the Council maintain the existing public parking arrangement with minor modifications to the existing restrictions to accommodate the needs of the existing users.

Potential improvement on the ROI if redevelopment is coupled with commercial uses but subject to further investigations.

Appendix A

Summary of Parking Supply and Restrictions

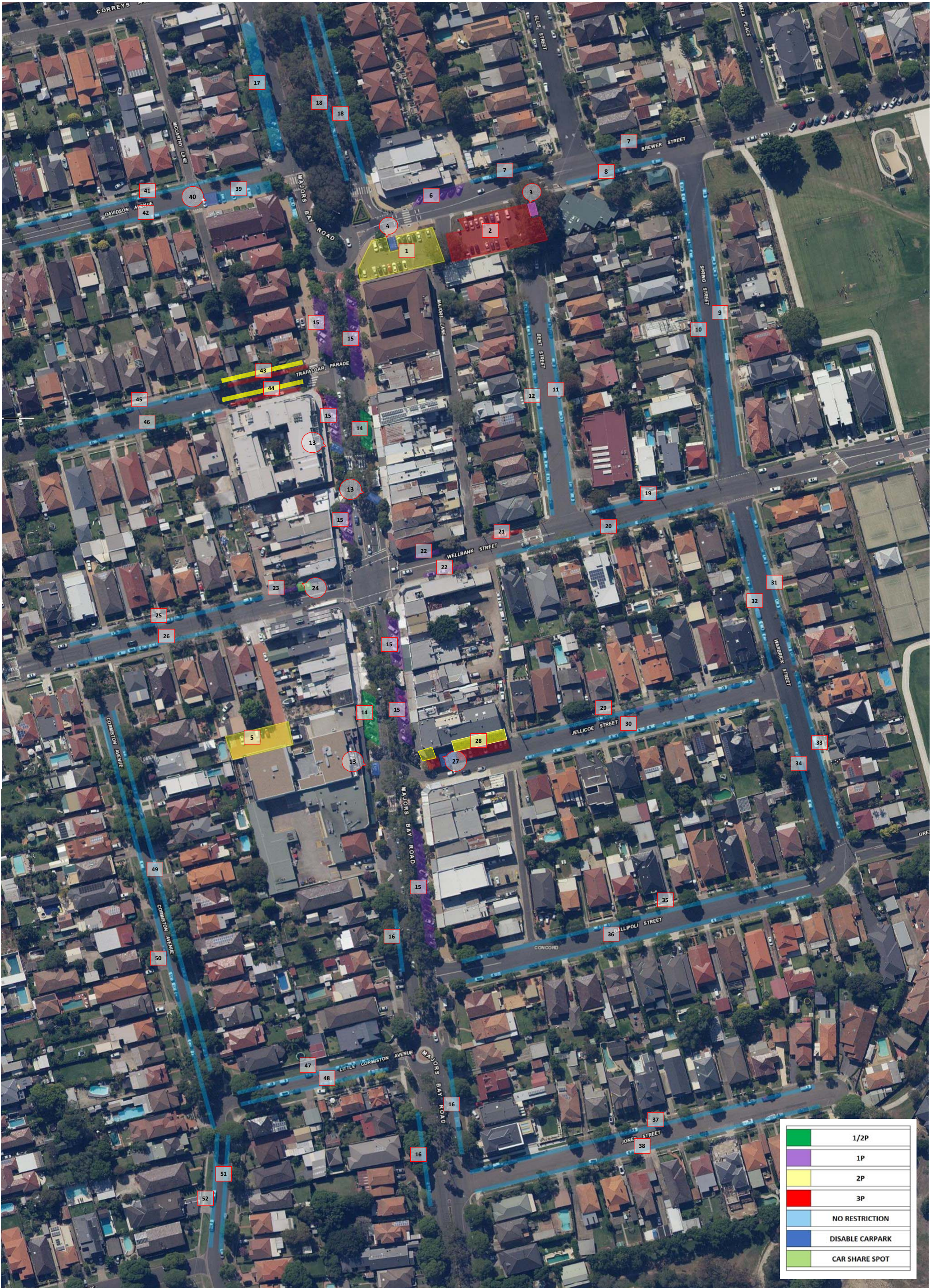
Table A.1. Parking Supply by Roads

Road Section/Restriction	No. of Spaces
Wellbank Street Carpark	
2P 8:30am - 6:00pm All Days	8
Bent Street - EAST	
No Restriction	11
Bent Street - WEST	
No Restriction	16
Brewer Street	
1P 8:30am - 6:00pm All Days	5
Brewer Street - NORTH	
No Restriction	8
Brewer Street - SOUTH	
No Restriction	10
Cormiston Ave - EAST	
No Restriction	16
Cormiston Ave - WEST	
No Restriction	23
Brewer Street Carpark	
10MIN 7:00am - 9:30am 2:30pm - 3:30pm	1
2P 8:30am - 6:00pm Mon - Fri; 2P 8:30am - 12:30pm SAT	20
3P 8:30am - 6:00pm Mon - Fri; 3P 8:30am - 12:30pm SAT	28
Disabled	1
Davidson Avenue - Disabled	
Disabled	1
Davidson Avenue - NORTH	
No Restriction	12
Davidson Avenue - Parallel Parking	
No Restriction	9
Davidson Avenue - SOUTH	
No Restriction	12
Gallipoli Street - NORTH	
No Restriction	18
Gallipoli Street - SOUTH	
No Restriction	19
Jellicoe Street - Disabled	
Disabled	2
Jellicoe Street - NORTH	
No Restriction	15
Jellicoe Street - Parallel	
2P 8:30am - 6:00pm Mon - Fri; 2P 8:30am - 12:30pm SAT	9
Jellicoe Street - SOUTH	
No Restriction	13

Road Section/Restriction	No. of Spaces
Jones Street - NORTH	
No Restriction	22
Jones Street - SOUTH	
No Restriction	20
Little Cormiston Ave - NORTH	
No Restriction	12
Little Cormiston Ave - SOUTH	
No Restriction	11
Majors Bay Road	
1/2P 8:30am - 6:00pm Mon - Fri; 1/2P 8:30am - 12:30pm SAT	12
1P 8:30am - 6:00pm Mon - Fri; 1P 8:30am - 12:30pm SAT	62
No Restriction	17
No Restriction	22
No Restriction Parallel Parking	17
Majors Bay Road - Disabled	
Disabled	3
Spring Street - EAST	
No Restriction	15
Spring Street - WEST	
No Restriction	17
Trafalgar Parade - NORTH	
2P 8:30am - 6:00pm Mon - Fri; 2P 8:30am - 12:30pm SAT	5
No Restriction	8
Trafalgar Parade - SOUTH	
2P 8:30am - 6:00pm Mon - Fri; 2P 8:30am - 12:30pm SAT	6
No Restriction	9
Warbrick Street - EAST	
No Restriction	19
Warbrick Street - WEST	
No Restriction	21
Wellbank Street	
1P 8:30am - 6:00pm Mon - Fri; 1P 8:30am - 12:30pm SAT	4
GO GET	1
Wellbank Street - NORTH	
1P 8:30am - 6:00pm Mon - Fri; 1P 8:30am - 12:30pm SAT	4
3P 8:30am - 6:00pm Mon - Fri; 3P 8:30am - 12:30pm SAT	2
No Restriction	14
Wellbank Street - SOUTH	
No Restriction	17
Total	597

Appendix B

Parking Occupancy Details



	1/2P
	1P
	2P
	3P
	NO RESTRICTION
	DISABLE CARPARK
	CAR SHARE SPOT

Majors Bay

Street Names		Zone	Parking Restrictions		No. of Spaces			
1	Brewer Street Carpark		2P 8:30am - 6:00pm MON - FRI	2P 8:30am - 12:30pm SAT	20	Bays	3.35%	of Total Capacity
2	Brewer Street Carpark		3P 8:30am - 6:00pm MON - FRI	3P 8:30am - 12:30pm SAT	28	Bays	4.69%	of Total Capacity
3	Brewer Street Carpark		10MIN 7:00am - 9:30am 2:30pm - 3:30pm		1	Bays	0.17%	of Total Capacity
4	Brewer Street Carpark		DISABLE		1	Bays	0.17%	of Total Capacity
5	Wellbank St Carpark		2P 8:30am - 6:00pm All Days		8	Bays	1.34%	of Total Capacity
6	Brewer Street		1P 8:30am - 6:00pm		5	Bays	0.84%	of Total Capacity
7	Brewer Street - NORTH		NO RESTRICTION		8	Bays	1.34%	of Total Capacity
8	Brewer Street - SOUTH		NO RESTRICTION		10	Bays	1.68%	of Total Capacity
9	Spring Street - EAST		NO RESTRICTION		15	Bays	2.51%	of Total Capacity
10	Spring Street - WEST		NO RESTRICTION		17	Bays	2.85%	of Total Capacity
11	Bent Street - EAST		NO RESTRICTION		11	Bays	1.84%	of Total Capacity
12	Bent Street - WEST		NO RESTRICTION		16	Bays	2.68%	of Total Capacity
13	Majors Bay Road - DISABLED		DISABLE		3	Bays	0.50%	of Total Capacity
14	Majors Bay Road		1/2P 8:30am - 6:00pm MON - FRI	1/2P 8:30am - 12:30pm SAT	12	Bays	2.01%	of Total Capacity
15	Majors Bay Road		1P 8:30am - 6:00pm MON - FRI	1P 8:30am - 12:30pm SAT	62	Bays	10.39%	of Total Capacity
16	Majors Bay Road		NO RESTRICTION		17	Bays	2.85%	of Total Capacity
17	Majors Bay Road		NO RESTRICTION Parallel Parking		17	Bays	2.85%	of Total Capacity
18	Majors Bay Road		NO RESTRICTION		22	Bays	3.69%	of Total Capacity
19	Wellbank Street - NORTH		NO RESTRICTION		8	Bays	1.34%	of Total Capacity
20	Wellbank Street - SOUTH		NO RESTRICTION		8	Bays	1.34%	of Total Capacity
21	Wellbank Street - NORTH		3P 8:30am - 6:00pm MON - FRI	3P 8:30am - 12:30pm SAT	2	Bays	0.34%	of Total Capacity
22	Wellbank Street		1P 8:30am - 6:00pm MON - FRI	1P 8:30am - 12:30pm SAT	6	Bays	1.01%	of Total Capacity
23	Wellbank Street - NORTH		1P 8:30am - 6:00pm MON - FRI	1P 8:30am - 12:30pm SAT	2	Bays	0.34%	of Total Capacity
24	Wellbank Street		GO GET		1	Bays	0.17%	of Total Capacity
25	Wellbank Street - NORTH		NO RESTRICTION		6	Bays	1.01%	of Total Capacity
26	Wellbank Street - SOUTH		NO RESTRICTION		9	Bays	1.51%	of Total Capacity
27	Jellicoe Street - DISABLED		DISABLE		2	Bays	0.34%	of Total Capacity
28	Jellicoe Street - Parallel		2P 8:30am - 6:00pm MON - FRI	2P 8:30am - 12:30pm SAT	9	Bays	1.51%	of Total Capacity
29	Jellicoe Street - NORTH		NO RESTRICTION		15	Bays	2.51%	of Total Capacity
30	Jellicoe Street - SOUTH		NO RESTRICTION		13	Bays	2.18%	of Total Capacity
31	Warbrick Street - EAST		NO RESTRICTION		8	Bays	1.34%	of Total Capacity
32	Warbrick Street - WEST		NO RESTRICTION		10	Bays	1.68%	of Total Capacity
33	Warbrick Street - EAST		NO RESTRICTION		11	Bays	1.84%	of Total Capacity
34	Warbrick Street - WEST		NO RESTRICTION		11	Bays	1.84%	of Total Capacity
35	Gallipoli Street - NORTH		NO RESTRICTION		18	Bays	3.02%	of Total Capacity
36	Gallipoli Street - SOUTH		NO RESTRICTION		19	Bays	3.18%	of Total Capacity
37	Jones Street - NORTH		NO RESTRICTION		22	Bays	3.69%	of Total Capacity
38	Jones Street - SOUTH		NO RESTRICTION		20	Bays	3.35%	of Total Capacity
39	Davidson Avenue - Parallel Parking		NO RESTRICTION		12	Bays	2.01%	of Total Capacity
40	Davidson Avenue - DISABLED		DISABLE		1	Bays	0.17%	of Total Capacity
41	Davidson Avenue - NORTH		NO RESTRICTION		12	Bays	2.01%	of Total Capacity
42	Davidson Avenue - SOUTH		NO RESTRICTION		9	Bays	1.51%	of Total Capacity
43	Trafalgar Parade - NORTH		2P 8:30am - 6:00pm MON - FRI	2P 8:30am - 12:30pm SAT	5	Bays	0.84%	of Total Capacity
44	Trafalgar Parade - SOUTH		2P 8:30am - 6:00pm MON - FRI	2P 8:30am - 12:30pm SAT	6	Bays	1.01%	of Total Capacity
45	Trafalgar Parade - NORTH		NO RESTRICTION		8	Bays	1.34%	of Total Capacity
46	Trafalgar Parade - SOUTH		NO RESTRICTION		9	Bays	1.51%	of Total Capacity
47	Little Cormiston Ave - NORTH		NO RESTRICTION		12	Bays	2.01%	of Total Capacity
48	Little Cormiston Ave - SOUTH		NO RESTRICTION		11	Bays	1.84%	of Total Capacity
49	Cormiston Ave - EAST		NO RESTRICTION		9	Bays	1.51%	of Total Capacity
50	Cormiston Ave - WEST		NO RESTRICTION		17	Bays	2.85%	of Total Capacity
51	Cormiston Ave - EAST		NO RESTRICTION		7	Bays	1.17%	of Total Capacity
52	Cormiston Ave - WEST		NO RESTRICTION		6	Bays	1.01%	of Total Capacity
Total Capacity					597	Bays	100.00%	of Total Capacity

Location	MAJORS BAY
Suburb	CONCORD
Client	ITPA
Job No/Name	19097
Survey Duration	16 HOURS
Day/Date	Wednesday, 25 September 2019

Location	Capacity	King Restrict	5:00 AM 5:30 AM	5:30 AM 6:00 AM	6:00 AM 6:30 AM	6:30 AM 7:00 AM	7:00 AM 7:30 AM	7:30 AM 8:00 AM	8:00 AM 8:30 AM	8:30 AM 9:00 AM	9:00 AM 9:30 AM	9:30 AM 10:00 AM	10:00 AM 10:30 AM	10:30 AM 11:00 AM	11:00 AM 11:30 AM	11:30 AM 12:00 PM	12:00 PM 12:30 PM	12:30 PM 1:00 PM	1:00 PM 1:30 PM
1 Brewer Street Carpark	20	3P	1	1	1	3	4	6	10	13	16	16	18	19	19	18	18	18	18
2 Brewer Street Carpark	28	3P	3	4	5	8	11	12	14	20	24	26	26	27	28	28	28	28	27
3 Brewer Street Carpark	1	10 MN	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	1
4 Brewer Street Carpark	1	DISABLED	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
5 Wellbank St Carpark	8	3P	7	7	6	5	4	4	5	3	1	1	2	2	3	3	4	4	3
6 Brewer Street	5	1P	0	0	0	0	1	0	3	5	5	5	5	5	5	5	4	4	4
7 Brewer Street - NORTH	8	NR	1	1	1	2	1	1	2	5	7	6	6	6	6	6	5	5	5
8 Brewer Street - SOUTH	10	NR	0	0	0	0	1	1	2	6	8	7	7	7	6	6	6	6	6
9 Spring Street - EAST	15	NR	5	6	7	7	8	8	10	11	11	10	9	10	12	12	12	11	10
10 Spring Street - WEST	17	NR	1	1	2	3	3	3	4	7	11	11	11	11	11	10	10	9	9
11 Bent Street - EAST	11	NR	3	4	6	6	7	7	7	8	11	11	11	11	11	10	10	10	11
12 Bent Street - WEST	16	NR	8	9	14	14	13	13	15	14	13	14	14	15	16	15	14	15	16
13 Majors Bay Road - DISABLED	3	DISABLED	0	0	0	0	0	1	2	3	3	2	2	2	2	2	2	1	1
14 Majors Bay Road	12	1/2 P	4	5	7	7	8	9	10	10	11	11	12	12	12	12	12	12	12
15 Majors Bay Road	62	1P	16	19	21	22	22	24	27	28	29	32	30	35	37	39	48	51	55
16 Majors Bay Road	17	NR	5	6	7	7	7	7	6	8	10	10	9	10	10	10	10	10	11
17 Majors Bay Road	17	Parallel	2	3	3	5	6	8	10	13	16	16	17	17	17	17	17	17	17
18 Majors Bay Road	22	NR	5	5	6	9	12	13	15	18	20	20	20	20	20	20	20	19	19
19 Wellbank Street - NORTH	8	NR	0	0	2	2	2	2	2	2	3	4	3	3	2	2	2	2	2
20 Wellbank Street - SOUTH	8	NR	1	2	3	4	5	6	7	7	8	8	8	8	8	8	8	8	6
21 Wellbank Street - NORTH	2	3P	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2
22 Wellbank Street	6	3P	0	0	0	1	2	3	3	4	5	5	4	4	4	4	5	5	5
23 Wellbank Street - NORTH	2	1P	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2
24 Wellbank Street	1	GO SET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25 Wellbank Street - NORTH	6	NR	3	3	3	3	3	3	4	5	6	5	5	4	4	5	5	4	4
26 Wellbank Street - SOUTH	9	NR	4	4	4	3	3	3	4	5	6	6	6	6	7	7	7	8	9
27 Jellicoe Street - DISABLED	2	DISABLED	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	2
28 Jellicoe Street - Parallel	9	3P	2	3	5	6	7	8	9	9	9	9	9	9	9	9	9	8	8
29 Jellicoe Street - NORTH	15	NR	5	6	7	8	9	11	13	14	15	15	15	15	15	15	15	15	15
30 Jellicoe Street - SOUTH	13	NR	6	6	8	9	10	10	11	12	13	13	13	13	13	13	13	13	13
31 Warbrick Street - EAST	8	NR	3	3	4	3	3	4	5	6	6	7	8	8	8	8	8	8	8
32 Warbrick Street - WEST	10	NR	2	3	5	4	3	5	7	7	7	8	10	9	9	9	9	9	9
33 Warbrick Street - EAST	11	NR	2	3	4	4	4	4	4	4	6	6	6	6	7	7	7	7	8
34 Warbrick Street - WEST	11	NR	2	3	4	5	4	5	5	5	5	6	7	8	9	6	5	5	5
35 Gallipoli Street - NORTH	18	NR	0	0	1	2	3	6	8	9	10	13	16	16	17	16	13	12	12
36 Gallipoli Street - SOUTH	19	NR	1	2	3	5	6	10	11	12	12	15	18	18	18	18	18	17	17
37 Jones Street - NORTH	22	NR	8	8	8	9	9	8	8	7	6	7	9	9	8	7	7	6	6
38 Jones Street - SOUTH	20	NR	8	8	8	8	8	8	8	6	5	5	5	5	6	6	6	6	6
Davidson Avenue - Parallel Parking	12	NR	5	7	6	5	4	4	5	8	10	10	10	11	11	11	11	10	9
Davidson Avenue - DISABLED	1	DISABLED	0	0	0	0	0	0	0	1	2	2	1	1	1	1	1	1	1
41 Davidson Avenue - NORTH	12	NR	9	9	9	8	8	6	3	4	5	5	6	6	6	6	7	7	7
42 Davidson Avenue - SOUTH	9	NR	3	3	3	3	2	2	2	2	3	3	3	3	4	4	4	3	3
43 Trafalgar Parade - NORTH	5	3P	1	1	1	1	2	2	2	3	4	4	4	3	3	3	3	3	3
44 Trafalgar Parade - SOUTH	6	3P	1	0	0	2	3	3	3	3	4	4	4	5	5	4	4	5	6
45 Trafalgar Parade - NORTH	8	NR	2	2	2	4	6	5	5	5	7	7	7	7	7	6	6	7	7
46 Trafalgar Parade - SOUTH	9	NR	3	3	5	4	4	4	4	6	8	8	8	8	9	9	9	8	7
47 Little Cormiston Ave - NORTH	12	NR	5	5	5	6	7	7	8	9	10	11	11	11	12	12	12	11	10
48 Little Cormiston Ave - SOUTH	11	NR	5	5	5	5	5	5	5	6	8	8	8	8	8	8	8	7	7
49 Cormiston Ave - EAST	9	NR	13	12	11	11	10	11	13	11	11	12	12	13	13	15	15	13	12
50 Cormiston Ave - WEST	17	NR	13	11	11	12	13	12	10	9	9	9	10	11	12	13	13	13	12
51 Cormiston Ave - EAST	7	NR	2	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1
52 Cormiston Ave - WEST	6	NR	1	1	1	1	1	1	1	2	3	3	3	3	4	4	4	3	2
Total Vehicles Parked	597		110	127	218	178	192	216	252	290	324	337	351	358	368	361	366	362	368
Number of Vacant Spaces	2		487	470	379	419	405	381	345	307	273	260	246	239	229	236	231	235	229
% of Capacity Used			18.4%	21.3%	36.5%	29.8%	32.2%	36.2%	42.2%	48.6%	54.3%	56.4%	58.8%	60.0%	61.6%	60.5%	61.3%	60.6%	61.6%

	Location	Capacity	King Restrict	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
				2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM	10:00 PM
1	Brewer Street Carpark Carpark	20	2P	18	18	17	17	17	16	15	14	10	8	6	8	11	11	12	8	6
2	Brewer Street Carpark Carpark	28	3P	27	26	24	18	14	13	11	9	7	6	4	3	3	3	2	2	3
3	Brewer Street Carpark Carpark	1	10 MIN	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Brewer Street Carpark Carpark	1	DISABLED	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
5	Council Carpark - Wellbank St	8	2P	4	4	6	6	5	7	8	8	6	6	7	8	8	7	6	5	5
6	Brewer Street	5	1P	4	4	4	4	4	3	2	1	1	2	3	2	1	0	0	0	0
7	Brewer Street - NORTH	8	NR	5	5	4	4	4	5	6	4	3	3	2	2	1	0	0	0	0
8	Brewer Street - SOUTH	10	NR	10	10	10	10	10	9	9	8	8	7	7	5	5	7	9	9	9
9	Spring Street - EAST	15	NR	10	10	10	10	10	9	9	8	8	7	7	5	5	7	9	9	9
10	Spring Street - WEST	15	NR	8	11	13	12	11	10	9	6	3	4	4	5	5	6	5	5	6
11	Bent Street - EAST	11	NR	11	11	11	10	9	9	8	6	6	6	4	6	7	8	9	8	7
12	Bent Street - WEST	16	NR	14	14	14	13	13	14	15	15	13	10	11	12	11	11	9	8	8
13	Majors Bay Road - DISABLED	3	DISABLED	2	2	2	1	1	2	2	2	1	1	1	0	0	0	0	1	2
14	Majors Bay Road	12	1/2 P	12	12	12	12	12	12	12	11	11	12	12	12	12	12	12	10	10
15	Majors Bay Road	62	1P	58	59	61	61	58	57	56	57	58	57	57	53	51	47	45	44	43
16	Majors Bay Road	17	NR	11	11	11	12	13	14	14	13	12	12	13	13	17	15	10	10	10
17	Majors Bay Road	17	PERMIT	16	15	17	16	14	14	14	15	12	11	10	9	8	8	7	5	4
18	Majors Bay Road	22	NR	22	22	20	19	18	19	18	16	12	7	5	7	5	5	4	4	4
19	Wellbank Street - NORTH	8	NR	8	8	6	6	8	8	7	7	7	7	6	5	5	6	6	5	5
20	Wellbank Street - SOUTH	8	NR	8	8	6	6	8	8	7	7	7	7	6	5	5	6	6	5	5
21	Wellbank Street - NORTH	2	3P	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
22	Wellbank Street	6	1P	6	6	6	6	6	6	6	5	5	5	6	6	6	4	2	3	4
23	Wellbank Street - NORTH	2	1P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	Wellbank Street	1	GO GET	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
25	Wellbank Street - NORTH	6	NR	4	4	5	4	5	5	4	4	4	4	4	4	3	5	6	5	5
26	Wellbank Street - SOUTH	9	NR	7	7	7	6	4	5	6	6	7	9	9	9	9	9	10	8	7
27	Jellicoe Street - DISABLED	2	DISABLED	2	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
28	Jellicoe Street - Parallel	9	NR	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
29	Jellicoe Street - NORTH	15	NR	15	15	15	13	13	13	13	14	14	13	12	12	12	11	10	13	14
30	Jellicoe Street - SOUTH	13	NR	13	12	12	13	13	13	13	13	14	13	13	12	11	11	11	10	9
31	Warbrick Street - EAST	8	NR	7	7	6	6	6	5	5	3	1	2	3	3	3	2	1	3	3
32	Warbrick Street - WEST	10	NR	9	7	7	6	6	7	7	6	6	6	7	5	4	3	3	2	2
33	Warbrick Street - EAST	11	NR	7	8	9	9	7	6	6	7	7	8	8	6	5	5	5	5	5
34	Warbrick Street - WEST	11	NR	5	7	7	9	9	7	7	8	9	7	5	3	3	4	5	5	5
35	Gallipoli Street - NORTH	18	NR	13	13	13	10	7	10	14	10	9	10	11	8	6	7	7	7	8
36	Gallipoli Street - SOUTH	19	NR	18	17	16	15	14	12	12	10	10	11	11	10	9	6	3	3	4
37	Jones Street - NORTH	22	NR	6	5	3	4	5	7	7	6	6	6	8	8	8	9	9	9	9
38	Jones Street - SOUTH	20	NR	8	8	9	10	10	9	9	9	8	8	7	7	7	7	6	5	4
39	Davidson Avenue - Parallel Parking	12	NR	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
40	Davidson Avenue - DISABLED	1	DISABLED	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
41	Davidson Avenue - NORTH	12	NR	8	8	7	7	10	10	11	9	7	6	6	5	5	4	3	2	2
42	Davidson Avenue - SOUTH	9	NR	3	3	3	3	4	4	4	4	4	3	3	3	3	3	3	2	1
43	Trafalgar Parade - NORTH	5	2P	4	4	4	4	5	5	4	4	4	5	5	5	5	3	1	1	1
44	Trafalgar Parade - SOUTH	6	2P	6	6	6	6	6	6	6	5	5	5	6	6	6	4	3	2	2
45	Trafalgar Parade - NORTH	8	NR	7	6	5	5	6	6	6	5	4	6	7	7	7	5	4	4	4
46	Trafalgar Parade - SOUTH	9	NR	7	7	6	6	7	7	6	5	5	5	6	6	7	5	3	3	2
47	Little Cormiston Ave - NORTH	12	NR	7	8	7	8	8	8	8	8	8	8	8	8	9	8	6	6	6
48	Little Cormiston Ave - SOUTH	11	NR	8	8	8	8	7	8	8	8	7	7	8	8	8	7	7	7	7
49	Cormiston Ave - EAST	9	NR	10	7	9	8	10	10	12	12	13	13	13	12	12	12	11	11	11
50	Cormiston Ave - WEST	9	NR	11	7	9	8	10	10	12	12	13	13	13	12	12	12	11	11	11
51	Cormiston Ave - EAST	1	NR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
52	Cormiston Ave - WEST	6	NR	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Vehicles Parked				372	369	369	353	338	337	335	317	294	288	283	270	268	254	240	225	221
Number of Vacant Spaces				225	228	228	244	259	260	262	280	303	309	314	327	329	343	357	372	376
% of Capacity Used				62.3%	61.8%	61.8%	59.1%	56.6%	56.4%	56.1%	53.1%	49.2%	48.2%	47.4%	45.2%	44.9%	42.5%	40.2%	37.7%	37.0%

Location	MAJORS BAY
Suburb	CONCORD
Client	TTPA
Job No/Name	19097
Survey Duration	16 HOURS
Day/Date	Thursday, 26 September 2019

Location	Capacity	King Restrict	5:00 AM - 5:30 AM	5:30 AM - 6:00 AM	6:00 AM - 6:30 AM	6:30 AM - 7:00 AM	7:00 AM - 7:30 AM	7:30 AM - 8:00 AM	8:00 AM - 8:30 AM	8:30 AM - 9:00 AM	9:00 AM - 9:30 AM	9:30 AM - 10:00 AM	10:00 AM - 10:30 AM	10:30 AM - 11:00 AM	11:00 AM - 11:30 AM	11:30 AM - 12:00 PM	12:00 PM - 12:30 PM	12:30 PM - 1:00 PM	1:00 PM - 1:30 PM
1 Majors bay Council Carpark	20	2P	1		1	1	2	3	4	6		9	11	13	19	19	19	18	18
2 Majors bay Council Carpark	28	3P	3	5	7	7	8	9	10	12	14	19	22	25	27	28	28	28	28
3 Majors bay Council Carpark	1	10 MN	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0
4 Majors bay Council Carpark	1	DISABLE	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
5 Council Carpark - Wellbank St	8	2P	0	0	0	1	2	3	4	5	5	5	5	3	3	3	4	3	3
6 Brewer Street	5	1P	1		1	2	3	3	3	4	4	4	4	4	4	4	4	4	4
7 Brewer Street - NORTH	8	NR	0	0	0	1	3	5	6	7	7	7	8	8	9	9	10	10	10
8 Brewer Street - SOUTH	10	NR	3	3	2		2	2	2	2	3	4	6	7	8	7	6	4	
9 Spring Street - EAST	15	NR	6	6	7	7	7	7	7	7	8	9	9	10	10	10	9	8	8
10 Spring Street - WEST	17	NR	3	5	7	7	8	8	8	9	9	9	10	10	10	10	9	9	
11 Bent Street - EAST	11	NR	9	11	13	13	13	12	12	12	12	12	13	14	15	14	13	12	
12 Bent Street - WEST	16	NR	0	0	0	0	0	1	1	2	2	3	3	3	3	3	2	2	
13 Majors Bay Road - DISABLE	3	DISABLE	11	11	12	12	12	12	12	11	11	11	12	12	12	12	12	12	12
14 Majors Bay Road	12	1/2 P	21	24	30	31	32	34	39	51	45	51	58	60	61	61	61	61	60
15 Majors Bay Road	62	1P	13	13	12	11	10	10	10	10	10	10	10	11	13	13	13	13	14
16 Majors Bay Road	17	NR	3	4	5	5	6	6	7	7	8	9	11	12	12	13	13	13	
17 Majors Bay Road	17	Parallel	2	3	5	7	9	10	11	14	14	14	15	20	21	21	20	19	19
18 Majors Bay Road	22	NR	3	3	2	2	3	4	5	5	4	4	3	3	3	3	3	3	3
19 Wellbank Street - NORTH	8	NR	4	3	3	4	5	5	5	6	6	6	6	6	7	7	7	6	6
20 Wellbank Street - SOUTH	8	NR	0	1	1	2	2	2	1	1	1	1	2	2	2	2	2	2	2
21 Wellbank Street - NORTH	2	2P	1	2	1	3	3	3	4	5	5	5	6	6	6	6	6	6	6
22 Wellbank Street	6	2P	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
23 Wellbank Street - NORTH	2	1P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24 Wellbank Street	1	GO-BET	3	3	3	4	3	2	1	2	3	3	4	4	3	3	4	3	3
25 Wellbank Street - NORTH	6	NR	3	5	7	6	5	5	5	5	5	6	8	8	8	8	8	7	7
26 Wellbank Street - SOUTH	9	NR	0	0	0	1	1	2	1	1	1	1	1	1	2	2	1	1	2
27 Jellicoe Street - DISABLE	2	Disable	4	5	6	6	7	7	8	8	8	8	9	9	9	9	9	9	9
28 Jellicoe Street - Parallel	9	2P	4	5	6	6	8	10	11	12	12	13	14	14	14	14	14	15	15
29 Jellicoe Street - NORTH	15	NR	4	6	8	8	10	11	12	12	12	12	13	13	13	13	13	13	13
30 Jellicoe Street - SOUTH	13	NR	3	4	5	5	5	5	6	6	6	7	7	7	8	9	9	9	9
31 Warbrick Street - EAST	8	NR	2	3	4	4	4	5	6	6	6	6	8	8	7	7	8	8	8
32 Warbrick Street - WEST	10	NR	3	3	5	5	5	5	5	5	5	6	7	7	8	8	8	7	7
33 Warbrick Street - EAST	11	NR	3	3	4	5	6	6	6	7	7	6	4	4	5	5	6	6	7
34 Warbrick Street - WEST	11	NR	10	8	3	5	7	14	15	16	16	16	15	15	17	18	18	17	17
35 Gallipoli Street - NORTH	18	NR	9	6	3	6	9	13	14	16	18	18	19	19	18	18	18	19	19
36 Gallipoli Street - SOUTH	19	NR	7	8	9	9	9	8	8	8	8	7	6	6	6	5	5	5	5
37 Jones Street - NORTH	22	NR	7	6	9	8	6	5	4	4	5	6	6	6	7	7	8	8	9
38 Jones Street - SOUTH	20	NR	7	5	4	2	2	3	3	2	2	2	2	2	2	3	3	3	3
39 Davidson Avenue - Parallel Parking	12	NR	8	6	7	7	7	8	8	8	8	8	8	10	11	11	11	10	10
40 Davidson Avenue - DISABLE	1	DISABLE	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
41 Davidson Avenue - NORTH	12	NR	8	6	2	2	3	3	3	4	5	7	8	8	7	7	6	6	6
42 Davidson Avenue - SOUTH	9	NR	3	3	2	2	2	3	3	2	2	2	3	3	2	2	2	2	2
43 Trafalgar Parade - NORTH	5	2P	1	1	1	1	1	1	1	1	2	3	4	4	5	5	5	4	4
44 Trafalgar Parade - SOUTH	6	2P	1	1	1	1	1	1	1	1	2	2	4	5	6	6	6	6	6
45 Trafalgar Parade - NORTH	8	NR	3	3	4	4	4	4	4	4	4	4	5	7	8	8	8	8	8
46 Trafalgar Parade - SOUTH	9	NR	3	2	2	3	4	5	5	5	5	6	6	8	9	9	9	9	9
47 Little Cormiston Ave - NORTH	12	NR	5	4	3	3	4	4	4	4	4	4	5	6	7	7	7	8	9
48 Little Cormiston Ave - SOUTH	11	NR	5	5	7	7	7	7	7	7	7	8	8	9	9	9	9	8	7
49 Cormiston Ave - EAST	9	NR	12	13	11	11	11	11	10	10	10	9	9	9	13	13	11	11	11
50 Cormiston Ave - WEST	17	NR	12	12	14	14	14	12	10	11	12	12	12	13	13	13	13	12	11
51 Cormiston Ave - EAST	7	NR	2	2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
52 Cormiston Ave - WEST	6	NR	1	1	1	1	1	2	2	2	1	1	1	2	2	2	2	2	2
Total Vehicles Parked	597		148	163	184	197	216	239	255	287	289	310	338	352	372	378	378	368	367
Number of Vacant Spaces			449	434	413	400	381	358	342	310	308	287	259	245	225	219	219	229	230
% of Capacity Used			24.8%	27.3%	30.8%	33.0%	36.2%	40.0%	42.7%	48.1%	48.4%	51.9%	56.6%	59.0%	62.3%	63.3%	63.3%	61.6%	61.5%

	Location	Capacity	King Restrict	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
				2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM	10:00 PM
1	Majors bay Council Carpark	20	2P	17	18	16	16	16	16	16	17	17	17	17	18	18	16	14	9	8
2	Majors bay Council Carpark	28	3P	27	25	28	20	15	16	17	15	13	12	12	10	7	5	5	8	4
3	Majors bay Council Carpark	1	10 MN	1		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Majors bay Council Carpark	1	DISABLE	1	1	1	1	1	0	0	0	1	1	1	1	0	0	0	0	0
5	Council Carpark - Wellbank St	8	2P	3	4	3	3	2	1	4	7	8	8	8	8	6	6	7	7	8
6	Brewer Street	5	1P	3	4	4	3	1	1	1	3	4	2	1	1	1	0	0	1	0
7	Brewer Street - NORTH	8	NR	5	5	5	5	5	3	3	2	2	1	1	1	1	2	2	2	2
8	Brewer Street - SOUTH	10	NR	10	10	10	6	6	5	5	4	4	4	5	5	6	6	6	6	6
9	Spring Street - EAST	15	NR	5	6	7	6	5	5	5	4	4	4	4	5	5	6	6	6	6
10	Spring Street - WEST	17	NR	8	8		7	6	8	9	8	5	9	10	9	11	10	10	10	10
11	Bent Street - EAST	11	NR	9	9	9	10	10	8	7	6	5	6	7	10	10	10	10	10	10
12	Bent Street - WEST	16	NR	12	13	14	13	12	12	12	12	12	11	11	14	10	8	7	10	10
13	Majors Bay Road - DISABLE	3	DISABLE	2	3	3	2	3	2	2	1	0	0	1	0	1	1	1	1	1
14	Majors Bay Road	12	1/2 P	11	10	12	12	12	12	12	12	12	12	12	11	11	10	10	7	5
15	Majors Bay Road	62	1P	61	61	60	58	58	55	52	56	59	59	59	58	58	58	57	52	51
16	Majors Bay Road	17	NR	12	12	11	11	13	12	12	11	10	11	12	12	13	13	14	12	11
17	Majors Bay Road	17	Parallel	14	14	13	11	9	11	12	12	11	13	13	10	6	5	3	3	3
18	Majors Bay Road	22	NR	19	18	18	17	17	16	16	13	10	8	6	6	6	7	6	6	6
19	Wellbank Street - NORTH	8	NR	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
20	Wellbank Street - SOUTH	8	NR	6	7	8	6	6	6	8	8	8	8	8	9	9	9	9	9	9
21	Wellbank Street - NORTH	2	3P	2	2	2	2	2	1	0	0	1	1	1	2	2	2	2	1	1
22	Wellbank Street	6	1P	6	5	5	4	4	4	5	5	6	5	4	6	5	5	4	5	5
23	Wellbank Street - NORTH	2	1P	2	2	2	2	2	1	1	2	2	1	1	1	1	1	1	2	1
24	Wellbank Street	1	GO GET	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	Wellbank Street - NORTH	6	NR	6	6	5	5	5	5	4	4	5	5	6	5	5	5	6	6	5
26	Wellbank Street - SOUTH	9	NR	8	9	9	9	9	8	7	7	6	7	9	9	10	10	10	7	5
27	Jellicoe Street - DISABLE	2	DISABLE	2	2	2	1	0	2	2	0	0	0	0	2	2	2	2	2	2
28	Jellicoe Street - Parallel	9	2P	8	8	7	9	9	9	9	9	9	9	9	9	9	9	9	9	9
29	Jellicoe Street - NORTH	15	NR	15	15	15	13	12	13	13	13	13	12	12	15	13	12	11	12	11
30	Jellicoe Street - SOUTH	13	NR	13	12	12	11	10	13	11	11	11	11	11	12	10	9	8	10	10
31	Warbrick Street - EAST	8	NR	8	8	8	7	7	8	7	6	4	4	4	4	4	3	3	2	2
32	Warbrick Street - WEST	10	NR	7	6	6	6	6	7	7	7	7	7	7	8	7	6	6	6	6
33	Warbrick Street - EAST	11	NR	9	9	9	9	9	8	8	6	6	5	5	5	5	5	5	4	4
34	Warbrick Street - WEST	11	NR	7	7	7	7	7	7	7	6	6	5	5	5	5	4	4	3	3
35	Gallipoli Street - NORTH	18	NR	17	16	16	13	11	11	10	11	12	13	15	15	15	10	7	4	4
36	Gallipoli Street - SOUTH	19	NR	19	18	18	17	16	17	19	16	14	14	14	14	12	10	9	9	9
37	Jones Street - NORTH	22	NR	5	4	4	5	6	7	9	10	10	11	11	10	10	11	10	10	9
38	Jones Street - SOUTH	20	NR	9	8	8	8	9	8	8	10	11	12	12	13	13	13	13	11	10
39	Davidson Avenue - Parallel Parking	12	NR	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
40	Davidson Avenue - DISABLE	1	DISABLE	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1	1	1
41	Davidson Avenue - NORTH	12	NR	6	7	6	6	6	7	7	7	7	7	7	6	5	5	5	5	5
42	Davidson Avenue - SOUTH	9	NR	4	4	4	4	4	4	4	5	6	5	5	4	4	4	4	4	5
43	Trafalgar Parade - NORTH	5	3P	3	3	2	3	5	5	5	4	4	3	3	3	3	3	3	2	0
44	Trafalgar Parade - SOUTH	6	2P	5	5	4	4	4	3	2	4	5	4	3	4	6	5	5	1	1
45	Trafalgar Parade - NORTH	8	NR	8	8	8	8	8	8	9	8	7	7	8	6	3	3	4	5	6
46	Trafalgar Parade - SOUTH	9	NR	9	9	9	8	8	8	8	8	8	7	7	8	8	8	9	8	7
47	Little Cormiston Ave - NORTH	12	NR	8	9	8	7	6	7	7	6	6	6	7	7	8	8	8	6	5
48	Little Cormiston Ave - SOUTH	11	NR	9	9	9	7	8	8	9	8	7	7	7	7	7	6	6	7	7
49	Cormiston Ave - EAST	9	NR	11	11	10	11	12	10	11	11	12	13	14	13	13	13	13	13	13
50	Cormiston Ave - WEST	17	NR	12	12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
51	Cormiston Ave - EAST	7	NR	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
52	Cormiston Ave - WEST	8	NR	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Total Vehicles Parked				373	371	371	339	325	324	323	317	313	306	313	324	307	294	279	260	243
Number of Vacant Spaces				224	226	226	258	272	273	274	280	284	291	284	273	290	303	318	337	354
% of Capacity Used				62.5%	62.1%	62.1%	56.8%	54.4%	54.3%	54.1%	53.1%	52.4%	51.3%	52.4%	51.4%	49.2%	46.7%	43.6%	40.7%	

Location	MAJORS BAY
Suburb	CONCORD
Client	TPA
Job No/Name	19097
Survey Duration	8 HOURS
Day/Date	Saturday, 19 October 2019

	Location	Capacity	Parking Restriction	8:00 AM 8:30 AM	8:30 AM 9:00 AM	9:00 AM 9:30 AM	9:30 AM 10:00 AM	10:00 AM 10:30 AM	10:30 AM 11:00 AM	11:00 AM 11:30 AM	11:30 AM 12:00 PM	12:00 PM 12:30 PM	12:30 PM 1:00 PM	1:00 PM 1:30 PM	1:30 PM 2:00 PM	2:00 PM 2:30 PM	2:30 PM 3:00 PM	3:00 PM 3:30 PM	3:30 PM 4:00 PM	4:00 PM 4:30 PM	4:30 PM 5:00 PM	5:00 PM 5:30 PM	5:30 PM 6:00 PM	
1	Majors bay Council Carpark	20	2P	9	14	19	19	19	19	19	19	17	16	14	15	16	15	15	16	12	8	7		
2	Majors bay Council Carpark	28	3P	13	20	28	28	26	26	27	27	28	28	26	25	25	26	27	24	24	12	7	9	
3	Majors bay Council Carpark	1	10 MIN	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	1	1	
4	Majors bay Council Carpark	1	DISABLE	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	0	0	0	
5	Council Carpark - Wellbank St	8	2P	6	5	3	4	5	6	7	7	7	6	6	8	6	5	5	6	6	5	6	5	
6	Brewer Street	5	NR	2	5	5	5	5	5	5	5	4	4	3	3	5	3	3	4	4	3	3	1	
7	Brewer Street - NORTH	8	NR	0	0	7	7	7	6	6	5	5	4	3	3	1	1	1	1	0	0	0	0	
8	Brewer Street - SOUTH	10	NR	1	1	5	6	8	7	6	5	4	3	3	3	2	2	1	1	1	1	1	1	
9	Spring Street - EAST	15	NR	6	6	7	10	14	12	8	7	6	6	5	5	6	4	3	4	5	5	5	4	
10	Spring Street - WEST	17	NR	4	4	4	10	14	11	9	7	6	6	6	8	11	9	9	9	10	10	9	9	
11	Bent Street - EAST	11	NR	10	10	9	10	11	10	10	10	10	10	11	11	9	7	7	8	8	8	7	6	
12	Bent Street - WEST	16	NR	12	15	15	15	15	15	15	15	15	14	14	15	16	14	12	12	12	11	11	10	
13	Majors Bay Road - DISABLE	3	DISABLE	2	2	2	2	3	3	2	3	3	3	3	3	3	3	3	2	2	1	1	2	
14	Majors Bay Road	12	1/2 P	11	12	12	11	11	11	12	12	12	12	12	12	12	12	12	11	11	11	11	11	
15	Majors Bay Road	62	1P	54	55	58	56	57	57	59	60	60	61	61	61	60	59	57	56	52	49	47	47	
16	Majors Bay Road	17	NR	13	15	16	15	15	16	16	16	17	17	17	16	16	16	17	16	15	15	17	14	
17	Majors Bay Road	17	Parallel	9	10	17	17	17	16	15	13	12	15	17	13	13	14	14	12	10	8	7	5	
18	Majors Bay Road	22	NR	8	8	15	17	18	16	16	15	14	14	16	14	10	10	10	10	9	9	9	7	
19	Wellbank Street - NORTH	8	NR	4	4	5	6	6	5	5	5	5	5	5	5	6	6	5	5	6	6	5	4	
20	Wellbank Street - SOUTH	8	NR	7	8	9	9	9	9	9	9	9	8	8	8	9	8	7	7	6	5	5	6	
21	Wellbank Street - NORTH	2	2P	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
22	Wellbank Street	6	2P	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
23	Wellbank Street - NORTH	2	1P	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
24	Wellbank Street	1	GO GET	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	Wellbank Street - NORTH	6	NR	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	2	2	2	3	2	
26	Wellbank Street - SOUTH	9	NR	5	7	8	7	6	7	8	7	7	8	8	8	7	7	7	6	5	5	5	4	
27	Jellicoe Street - DISABLE	2	DISABLE	2	2	1	2	2	2	2	2	2	2	1	1	2	2	2	2	2	1	1	1	
28	Jellicoe Street - Parallel	9	2P	8	8	9	9	9	9	9	8	8	8	9	9	9	9	8	8	8	8	8	7	
29	Jellicoe Street - NORTH	15	NR	8	10	12	13	13	13	13	14	14	13	12	12	12	12	13	10	10	9	9	7	
30	Jellicoe Street - SOUTH	13	NR	9	11	13	13	13	12	11	11	12	12	12	12	13	13	12	11	10	9	9	8	
31	Warbrick Street - EAST	8	NR	5	6	6	7	8	8	7	7	7	7	7	8	8	8	7	7	8	7	6	6	
32	Warbrick Street - WEST	10	NR	3	3	5	6	7	6	5	5	5	5	5	5	5	3	2	2	3	3	2	3	
33	Warbrick Street - EAST	11	NR	5	5	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	6	6	4	
34	Warbrick Street - WEST	11	NR	2	2	1	2	2	2	2	2	2	2	2	4	4	3	3	3	3	3	3	3	
35	Gallipoli Street - NORTH	18	NR	10	12	12	13	14	14	14	14	14	15	16	14	12	12	10	10	9	9	6	6	
36	Gallipoli Street - SOUTH	19	NR	13	15	19	19	19	18	18	16	16	16	16	14	11	11	12	10	7	7	6	5	
37	Jones Street - NORTH	22	NR	9	8	7	8	9	10	10	10	11	11	10	10	10	11	11	12	10	10	12	14	
38	Jones Street - SOUTH	20	NR	5	6	7	8	6	7	8	8	10	10	10	12	12	14	13	13	10	9	11	13	
39	Davidson Avenue - Parallel Parking	12	NR	3	7	9	9	9	9	10	10	9	9	10	8	8	8	10	10	9	4	3	3	
40	Davidson Avenue - DISABLE	1	DISABLE	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	
41	Davidson Avenue - NORTH	12	NR	3	6	8	8	8	9	10	10	9	8	8	7	7	8	8	8	7	5	2	3	
42	Davidson Avenue - SOUTH	9	NR	5	5	5	6	7	7	7	6	6	6	6	7	7	7	7	6	6	5	5	4	
43	Trafalgar Parade - NORTH	5	2P	3	4	5	5	5	5	5	5	5	5	3	3	3	3	4	4	3	3	4	3	
44	Trafalgar Parade - SOUTH	6	2P	3	4	5	5	5	5	5	6	6	6	4	4	4	5	5	5	6	6	4	3	
45	Trafalgar Parade - NORTH	8	NR	6	6	6	6	6	6	6	6	6	6	7	7	7	8	8	8	6	3	4	3	
46	Trafalgar Parade - SOUTH	9	NR	7	7	7	7	6	6	6	6	6	6	7	7	7	7	7	7	6	6	7	6	
47	Little Cormiston Ave - NORTH	12	NR	3	3	4	3	3	4	4	4	3	3	3	3	4	4	4	5	6	6	6	8	
48	Little Cormiston Ave - SOUTH	11	NR	6	6	6	6	7	7	7	7	7	7	7	8	9	9	7	7	7	7	8	5	
49	Cormiston Ave - EAST	9	NR	14	14	15	14	13	12	12	13	12	12	14	14	12	11	11	11	12	12	13	13	
50	Cormiston Ave - WEST	17	NR	12	10	9	11	13	13	14	12	14	15	17	14	11	11	11	11	11	12	13	12	
51	Cormiston Ave - EAST	7	NR	0	0	1	5	5	5	4	4	4	4	4	4	3	3	3	3	3	2	1	1	
52	Cormiston Ave - WEST	6	NR	1	1	3	4	5	3	3	3	2	2	2	3	3	3	3	3	3	1	1	1	
Total Vehicles Parked				597	269	303	356	374	388	378	373	365	363	360	362	354	350	335	327	309	299	276	261	237
Number of Vacant Spaces					328	294	241	223	209	219	224	232	234	237	235	243	247	262	270	288	298	321	336	360
% of Capacity Used					45.1%	50.8%	59.6%	62.6%	65.0%	63.3%	62.5%	61.1%	60.8%	60.3%	60.6%	59.3%	58.6%	56.1%	54.8%	51.8%	50.1%	46.2%	43.7%	39.7%

Location	MAJORS BAY
Suburb	CONCORD
Client	TPA
Job No/Name	19097
Survey Duration	8 HOURS
Day/Date	Sunday, 20 October 2019

Location	Capacity	Parking Restriction	8:00 AM - 8:30 AM	8:30 AM - 9:00 AM	9:00 AM - 9:30 AM	9:30 AM - 10:00 AM	10:00 AM - 10:30 AM	10:30 AM - 11:00 AM	11:00 AM - 11:30 AM	11:30 AM - 12:00 PM	12:00 PM - 12:30 PM	12:30 PM - 1:00 PM	1:00 PM - 1:30 PM	1:30 PM - 2:00 PM	2:00 PM - 2:30 PM	2:30 PM - 3:00 PM	3:00 PM - 3:30 PM	3:30 PM - 4:00 PM	4:00 PM - 4:30 PM	4:30 PM - 5:00 PM	5:00 PM - 5:30 PM	5:30 PM - 6:00 PM
1 Majors bay Council Carpark	20	2P	5	9	14	15	16	17	17	17	17	18	18	16	14	13	13	12	10	9	8	7
2 Majors bay Council Carpark	28	2P	12	13	15	18	22	26	28	28	26	27	27	26	24	22	20	18	15	14	13	18
3 Majors bay Council Carpark	1	10 MIN	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
4 Majors bay Council Carpark	1	DISABLE	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
5 Council Carpark - Wellbank St	8	2P	6	6	4	7	7	7	7	7	7	8	8	6	5	5	5	5	4	4	8	
6 Brewer Street	5		4	4		3	3	4	5	4	5	4	5	4	4	4	5	5	2	0	0	
7 Brewer Street - NORTH	8	NR	0	0	0	0	0	1	2	1	1	1	0	0	0	0	0	0	0	0	0	
8 Brewer Street - SOUTH	10	NR	0	0	0	0	1	2	2	1	1	0	0	1	1	1	1	1	1	1	1	
9 Spring Street - EAST	15	NR	4	4	3	3	3	4	5	4	4	5	6	6	5	4	3	3	5	5	4	4
10 Spring Street - WEST	17	NR	6	6	7	7	9	9	8	8	8	8	8	8	8	7	8	9	9	9	9	
11 Bent Street - EAST	11	NR	4	5	6	8	9	10	10	10	10	10	10	10	10	8	6	5	3	3	4	5
12 Bent Street - WEST	16	NR	10	10	10	11	12	12	13	13	13	13	13	13	13	12	11	11	11	11	11	10
13 Majors Bay Road - DISABLE	3	DISABLE	0	0	1	1	3	3	3	3	3	2	2	2	2	3	3	3	3	3	0	
14 Majors Bay Road	12	1/2 P	12	12	11	11	12	12	11	11	11	12	12	11	11	11	12	12	12	12	12	
15 Majors Bay Road	62	1P	42	46	56	58	60	61	61	61	61	61	59	57	57	59	60	60	59	59	52	
16 Majors Bay Road	17	NR	15	14	13	13	12	15	17	16	16	16	17	17	17	17	17	17	16	16	15	14
17 Majors Bay Road	17	Parallel	6	10	10	6	6	4	3	4	5	5	6	6	6	4	2	4	6	4	4	3
18 Majors Bay Road	22	NR	9	9	9	10	10	10	8	6	6	7	7	7	7	6	5	5	5	6	6	
19 Wellbank Street - NORTH	8	NR	2	3	3	5	6	6	6	5	4	4	3	3	3	3	3	3	4	5	4	
20 Wellbank Street - SOUTH	8	NR	5	5	6	7	7	7	8	8	7	5	4	4	5	4	3	3	4	4	3	3
21 Wellbank Street - NORTH	2	2P	0	0	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	0	
22 Wellbank Street	2	2P	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	
23 Wellbank Street - NORTH	2	2P	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	
24 Wellbank Street	2	2P	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	
25 Wellbank Street - NORTH	6	NR	4	4	3	3	4	4	4	4	4	4	4	3	3	3	4	4	3	4	4	
26 Wellbank Street - SOUTH	9	NR	4	4	4	5	5	5	6	5	4	4	5	5	5	6	6	6	4	4	5	7
27 Jellicoe Street - DISABLE	2	DISABLE	1	1	1	1	1	2	2	2	1	2	2	1	1	1	2	2	1	2	2	
28 Jellicoe Street - Parallel	9	2P	7	7	8	8	8	9	9	9	8	8	9	8	8	8	7	7	7	7	9	9
29 Jellicoe Street - NORTH	15	NR	8	8	7	7	10	13	15	15	14	14	15	13	11	10	8	8	9	9	8	
30 Jellicoe Street - SOUTH	13	NR	5	5	6	10	11	12	13	13	13	13	12	11	10	8	6	6	7	7	9	5
31 Warbrick Street - EAST	8	NR	0	0	0	0	3	4	5	6	7	7	7	7	6	4	4	2	2	2	2	
32 Warbrick Street - WEST	10	NR	2	2	4	4	5	5	6	7	7	5	5	6	4	1	3	2	2	3	3	
33 Warbrick Street - EAST	11	NR	3	3	2	2	3	4	6	6	6	6	4	4	4	5	5	5	5	5	4	
34 Warbrick Street - WEST	11	NR	4	4	3	3	3	5	6	6	6	5	4	4	4	6	6	6	4	4	4	
35 Gallipoli Street - NORTH	18	NR	6	7	8	7	5	6	9	11	13	13	11	12	12	9	7	6	5	4	3	3
36 Gallipoli Street - SOUTH	19	NR	3	7	11	11	10	12	12	11	10	10	10	10	11	9	9	8	8	8	8	
37 Jones Street - NORTH	22	NR	12	12	12	12	11	11	11	11	11	11	12	12	12	11	11	10	10	10	9	9
38 Jones Street - SOUTH	20	NR	8	8	10	10	8	7	7	9	11	11	11	11	11	10	10	9	8	7	8	
39 Davidson Avenue - Parallel Parking	12	NR	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	3	3	2	
40 Davidson Avenue - DISABLE	1	DISABLE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
41 Davidson Avenue - NORTH	12	NR	4	4	3	3	4	4	3	3	4	4	4	4	4	4	3	3	4	5	5	
42 Davidson Avenue - SOUTH	9	NR	3	3	3	4	5	5	3	3	3	3	3	4	4	4	4	4	3	3	3	
43 Trafalgar Parade - NORTH	5	2P	0	2	4	4	3	3	4	4	3	3	4	4	5	5	4	4	3	3	2	3
44 Trafalgar Parade - SOUTH	6	2P	2	4	5	5	5	5	5	5	5	6	6	6	6	6	6	5	4	4	3	3
45 Trafalgar Parade - NORTH	8	NR	6	5	5	5	5	6	6	7	8	8	8	8	8	8	8	7	6	4	2	2
46 Trafalgar Parade - SOUTH	9	NR	7	7	6	6	5	5	6	7	8	9	9	8	8	8	7	7	8	7	6	7
47 Little Cormiston Ave - NORTH	11	NR	5	4	3	4	10	9	8	8	7	7	7	8	8	9	8	7	6	6	7	
48 Little Cormiston Ave - SOUTH	12	NR	6	6	5	5	8	8	8	8	8	8	8	8	5	4	4	6	5	7	8	
49 Cormiston Ave - EAST	9	NR	5	5	8	9	10	10	12	12	11	11	11	11	12	12	12	12	14	14	13	
50 Cormiston Ave - WEST	17	NR	10	10	12	12	12	12	10	10	12	12	14	14	13	12	12	13	14	13	13	
51 Cormiston Ave - EAST	7	NR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
52 Cormiston Ave - WEST	6	NR	2	2	2	2	2	3	3	3	2	5	8	8	4	4	3	3	4	4	4	
Total Vehicles Parked	597		218	237	265	279	294	318	336	335	330	332	330	317	308	290	270	267	255	249	250	238
Number of Vacant Spaces			379	360	332	318	303	279	261	262	267	265	267	280	289	307	327	330	342	348	347	359
% of Capacity Used			36.5%	39.7%	44.4%	46.7%	49.2%	53.3%	56.3%	56.1%	55.3%	55.6%	55.3%	53.1%	51.6%	48.6%	45.2%	44.7%	42.7%	41.7%	41.9%	39.9%

Appendix C

Summary of Peak Parking Occupancy

Table C.1. Weekday - Peak Parking Occupancy by Road and Restriction

Road	Restrictions	No. of Spaces	Observed Wednesday Peak Occupancy		Observed Thursday Peak Occupancy	
			No.	%	No.	%
Wellbank Street Carpark	2P	8	8	100%	8	100%
Bent Street	NR	27	27	100%	26	96%
Brewer Street	1P	5	5	100%	4	80%
	NR	18	15	83%	18	100%
Cormiston Ave	NR	39	35	90%	36	92%
Brewer Street Carpark	10-Minute	1	1	100%	1	100%
	2P	20	20	100%	20	100%
	3P	28	28	100%	28	100%
	Disabled	1	1	100%	1	100%
Davidson Avenue	Disabled	1	1	100%	1	100%
	NR	33	26	79%	25	76%
Gallipoli Street	NR	37	35	95%	37	100%
Jellicoe Street	2P	9	9	100%	9	100%
	Disabled	2	2	100%	2	100%
	NR	28	28	100%	28	100%
Jones Street	NR	42	21	50%	24	57%
Little Cormiston Ave	NR	23	20	87%	18	78%
Majors Bay Road	1/2P	12	12	100%	12	100%
	1P	62	62	100%	62	100%
	NR	39	39	100%	35	90%
	Parallel	17	17	100%	14	82%
	Disabled	3	3	100%	3	100%
Spring Street	NR	32	25	78%	21	66%
Trafalgar Parade	2P	11	11	100%	11	100%
	NR	17	16	94%	17	100%
Warbrick Street	NR	40	36	90%	32	80%
Wellbank Street	1P	8	8	100%	8	100%
	3P	2	2	100%	2	100%
	GO GET	1	1	100%	1	100%
	NR	31	29	94%	31	100%
Total		597	542	91%	534	89%

Table C.2. Weekend - Peak Parking Occupancy by Road and Restriction

Road	Restrictions	No. of Spaces	Observed Saturday Peak Occupancy		Observed Sunday Peak Occupancy	
			No.	%	No.	%
Wellbank Street Carpark	2P	8	8	100%	8	100%
Bent Street	NR	27	27	100%	23	85%
Brewer Street	1P	5	5	100%	5	100%
	NR	18	15	83%	3	17%
Cormiston Ave	NR	39	32	82%	35	90%
Brewer Street Carpark	10-Minute	1	1	100%	1	100%
	2P	20	20	100%	18	90%
	3P	28	28	100%	28	100%
	Disabled	1	1	100%	1	100%
Davidson Avenue	Disabled	1	1	100%	1	100%
	NR	33	27	82%	14	42%
Gallipoli Street	NR	37	35	95%	25	68%
Jellicoe Street	2P	9	9	100%	9	100%
	Disabled	2	2	100%	2	100%
	NR	28	27	96%	28	100%
Jones Street	NR	42	28	67%	23	55%
Little Cormiston Ave	NR	23	17	74%	18	78%
Majors Bay Road	1/2P	12	12	100%	12	100%
	1P	62	62	100%	62	100%
	NR	39	35	90%	27	69%
	Parallel	17	17	100%	10	59%
	Disabled	3	3	100%	3	100%
Spring Street	NR	32	28	88%	15	47%
Trafalgar Parade	2P	11	11	100%	11	100%
	NR	17	15	88%	17	100%
Warbrick Street	NR	40	25	63%	26	65%
Wellbank Street	1P	8	8	100%	8	100%
	3P	2	2	100%	2	100%
	GO GET	1	1	100%	1	100%
	NR	31	27	87%	25	81%
Total		597	529	89%	460	77%

Table C.3. Weekday - Peak Parking Occupancy by Type of Restrictions

Restrictions	No. of Spaces	Observed Wednesday Peak Occupancy		Observed Thursday Peak Occupancy	
		No.	%	No.	%
10-Minute	1	1	100%	1	100%
1/2P	12	12	100%	12	100%
1P	75	75	100%	73	97%
2P	48	48	100%	48	100%
3P	30	30	100%	30	100%
Disabled	7	7	100%	7	100%
GO GET	1	1	100%	1	100%
NR	423	369	87%	362	86%
Total	597	543	91%	534	89%

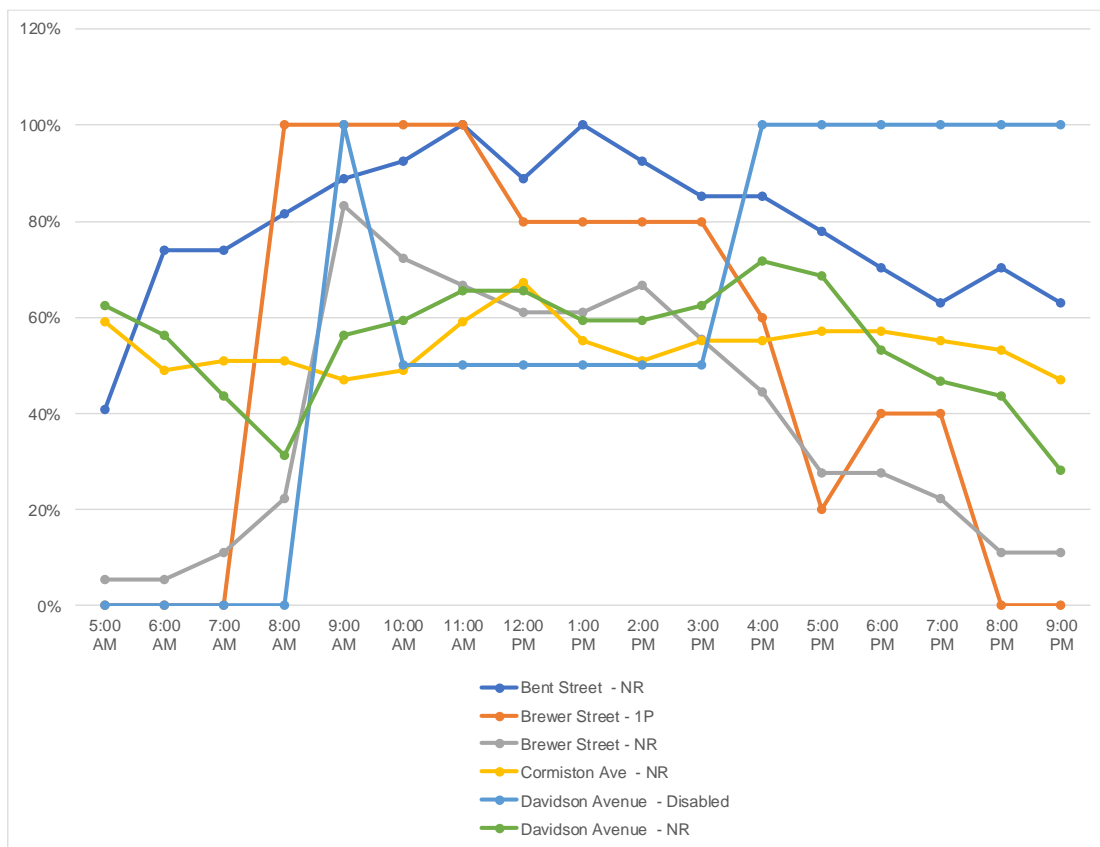
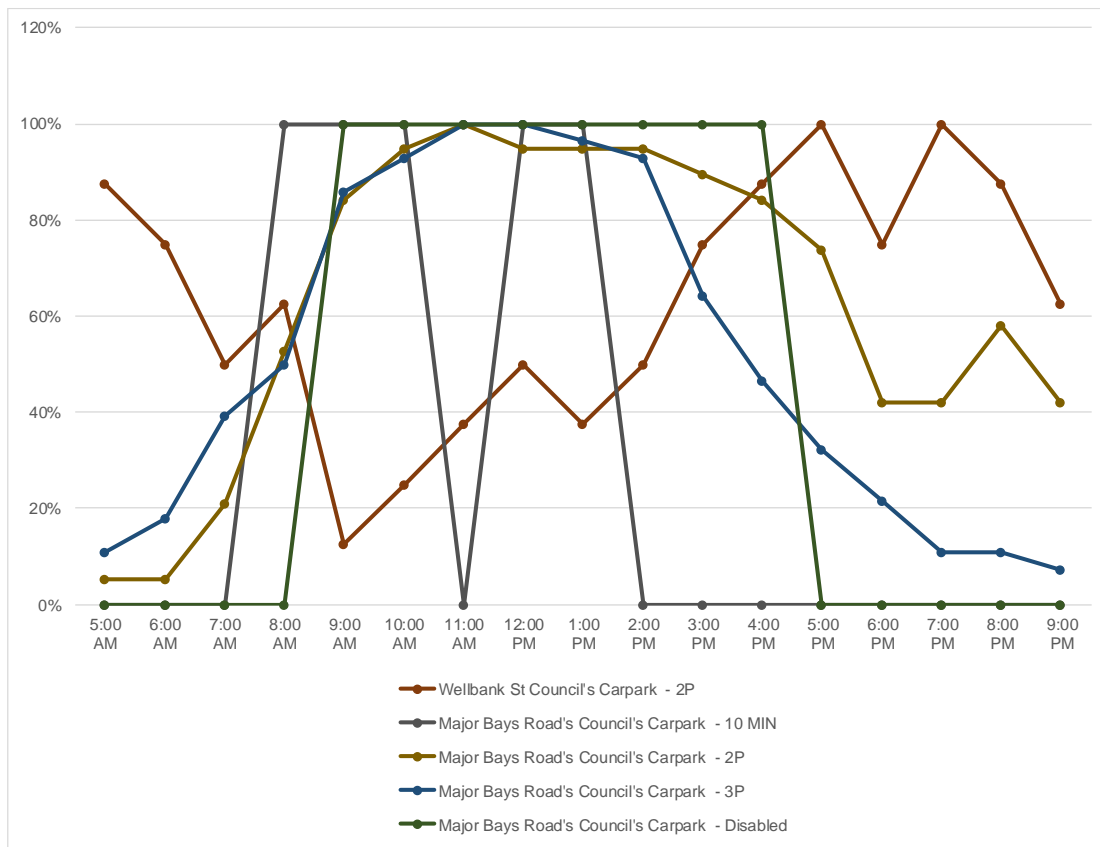
Table C.4. Weekend - Peak Parking Occupancy by Type of Restrictions

Restrictions	No. of Spaces	Observed Saturday Peak Occupancy		Observed Sunday Peak Occupancy	
		No.	%	No.	%
10-Minute	1	1	100%	1	100%
1/2P	12	12	100%	12	100%
1P	75	75	100%	75	100%
2P	48	48	100%	46	96%
3P	30	30	100%	30	100%
Disabled	7	7	100%	7	100%
GO GET	1	1	100%	1	100%
NR	423	365	86%	289	68%
Total	597	539	90%	461	77%

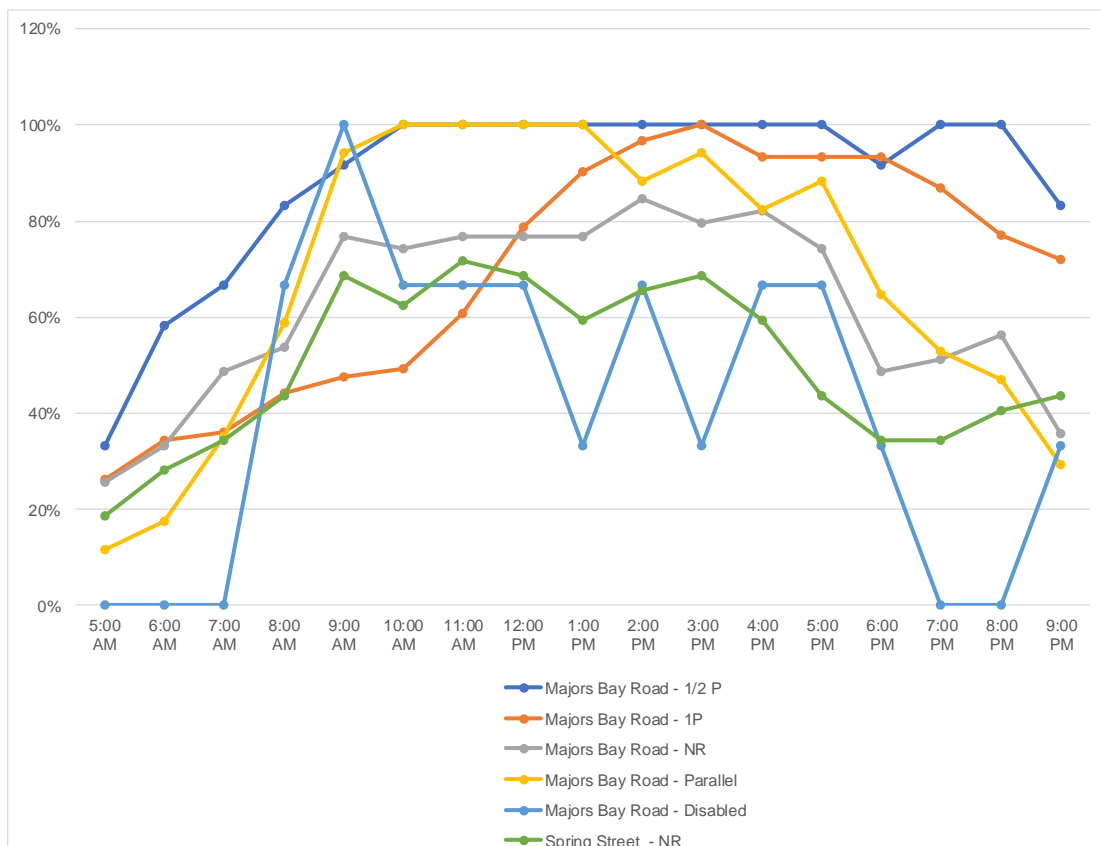
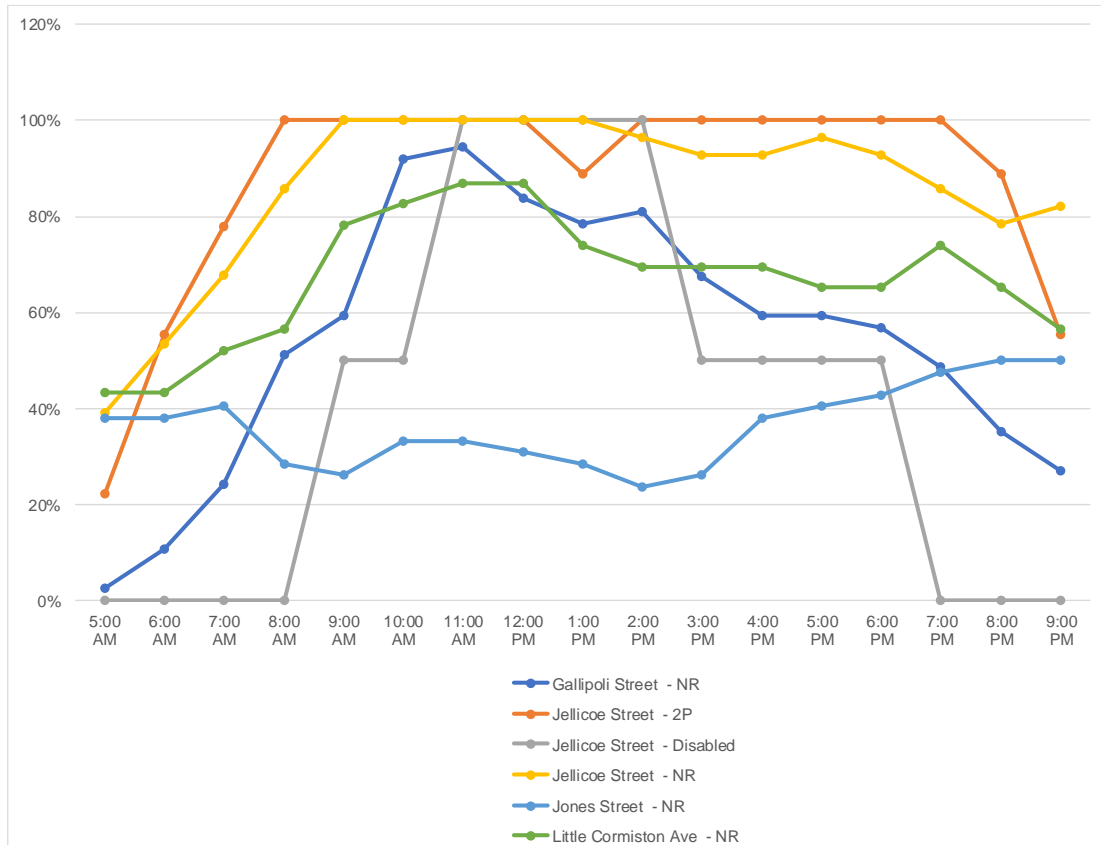
Appendix D

Parking Occupancy Profile

Figure D.1. Parking Occupancy Profile (%) by Roads on Wednesday



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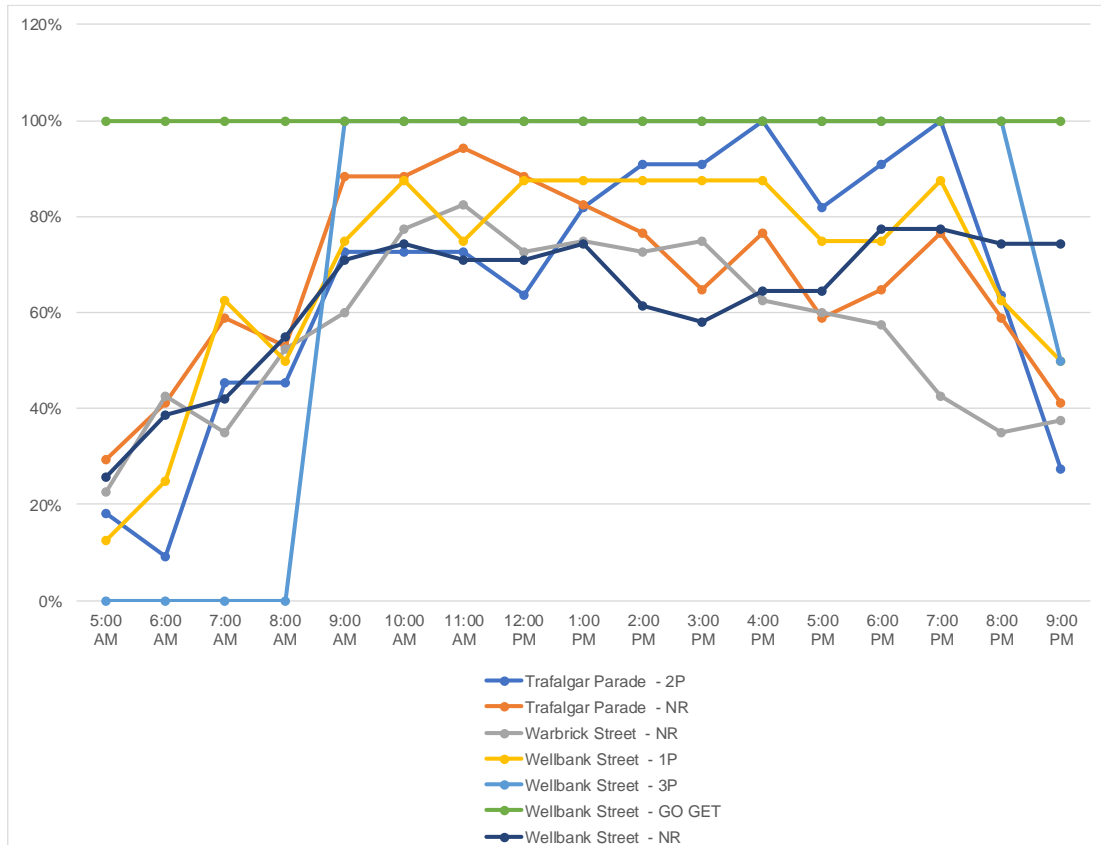
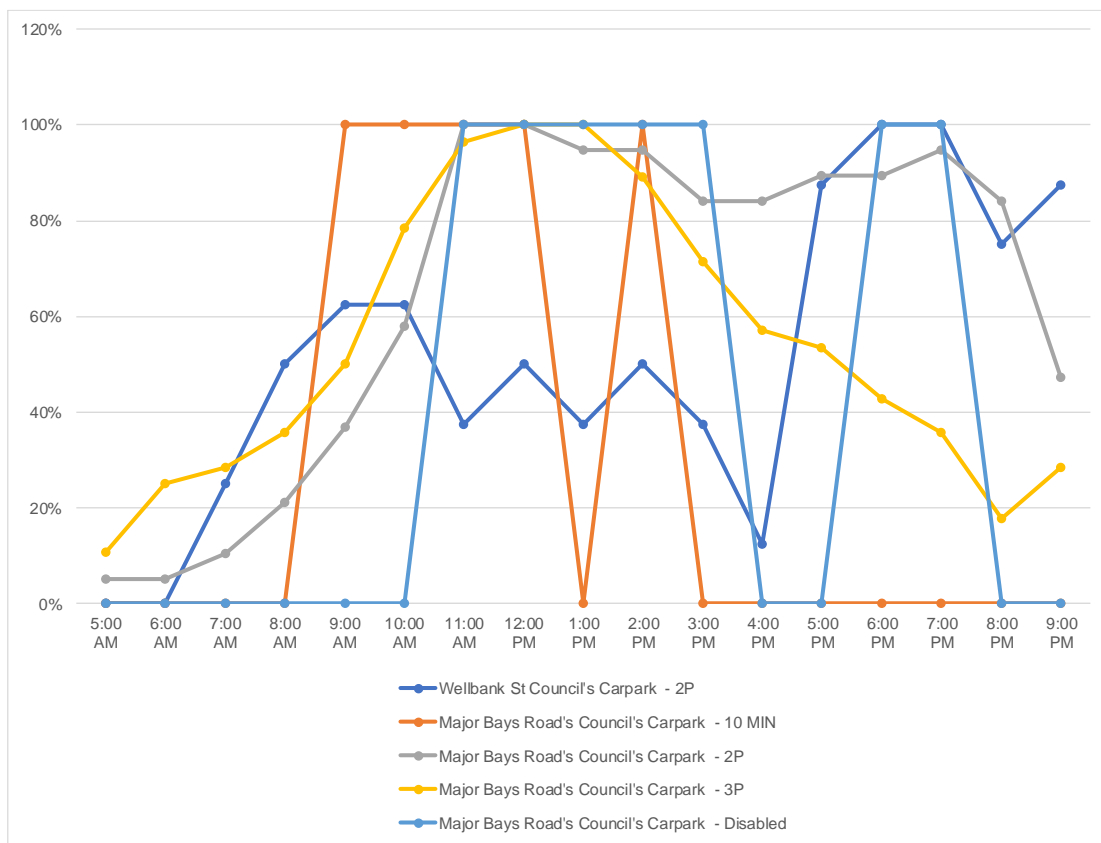
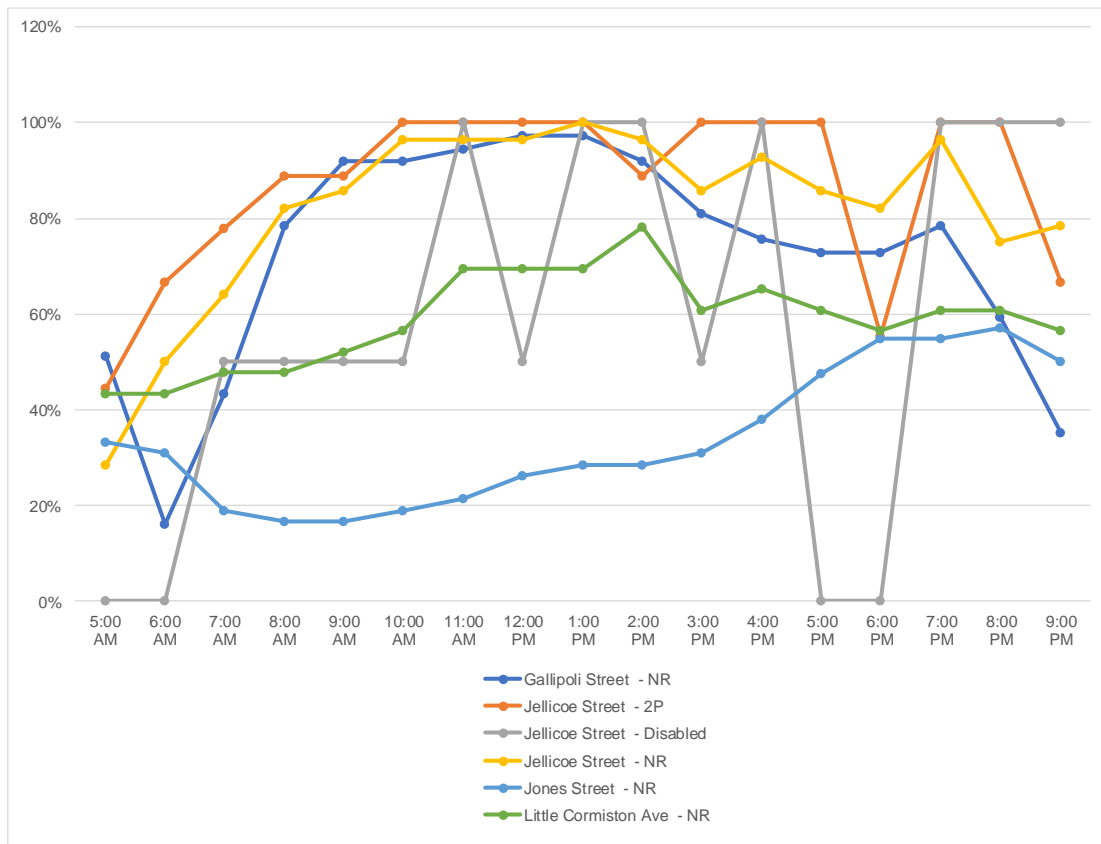
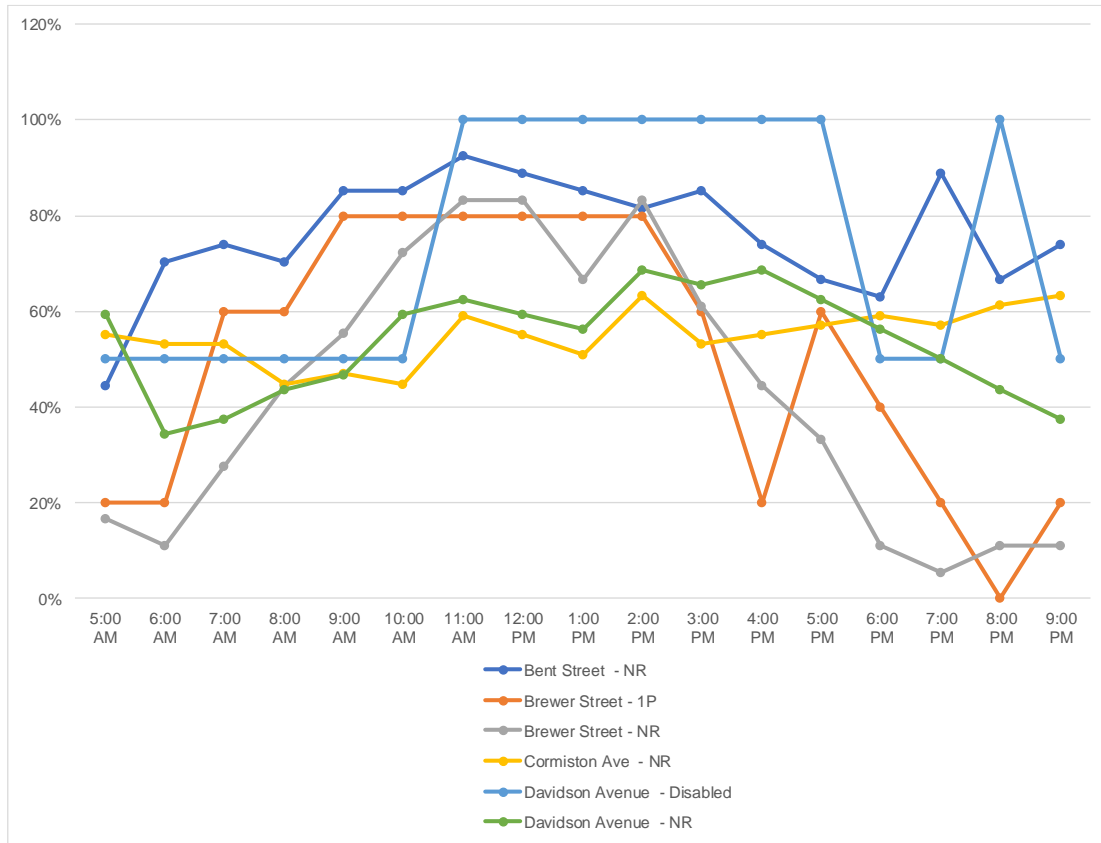


Figure D.2. Parking Occupancy Profile (%) by Roads on Thursday



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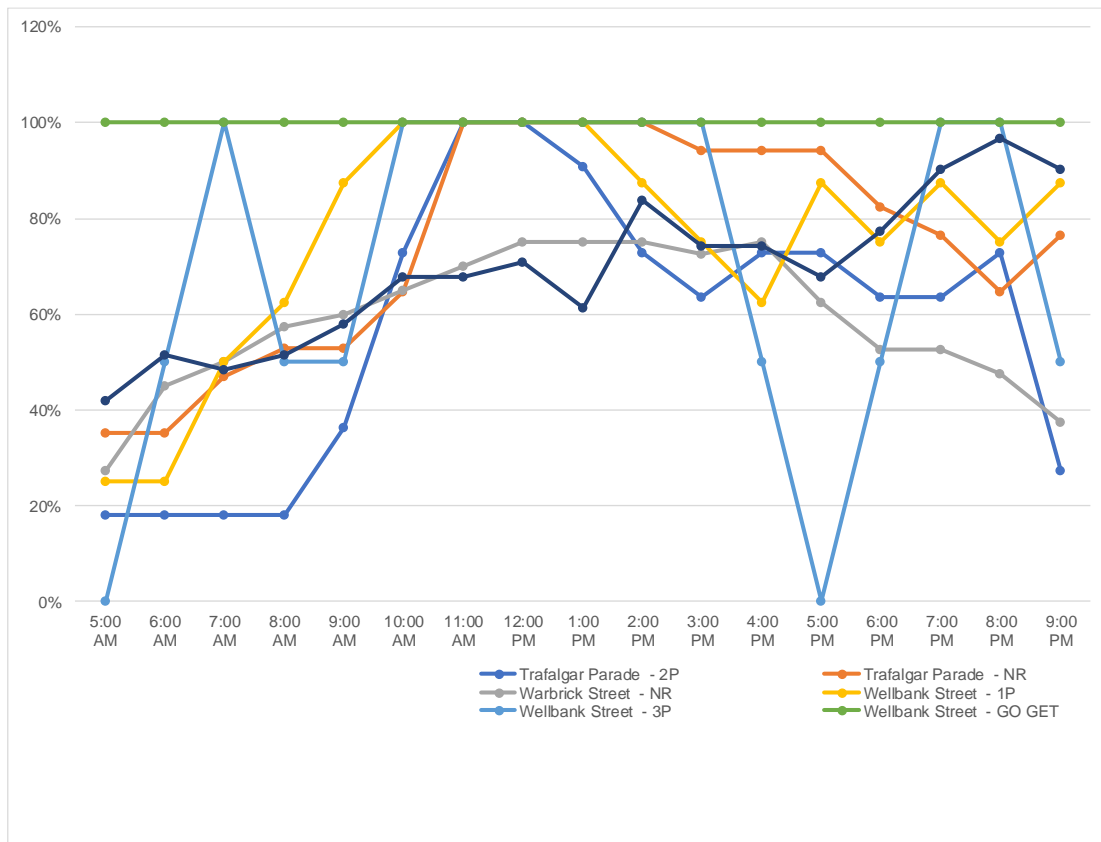
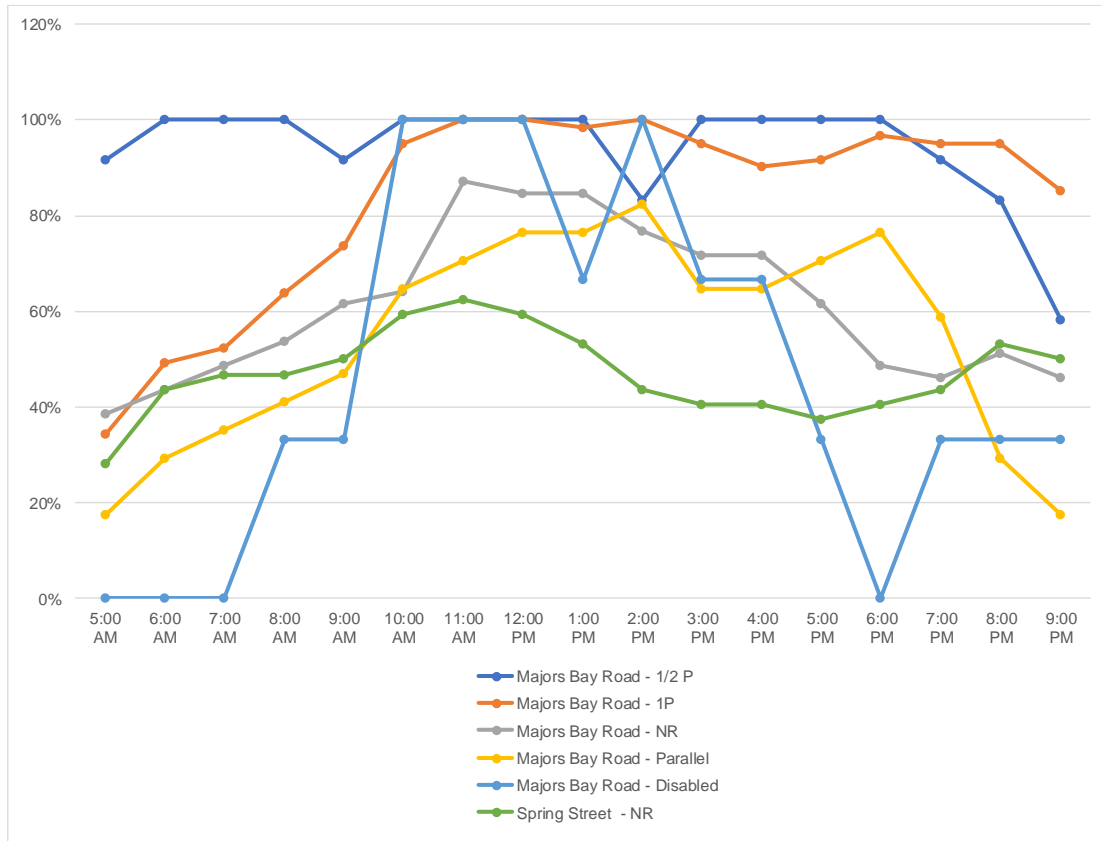
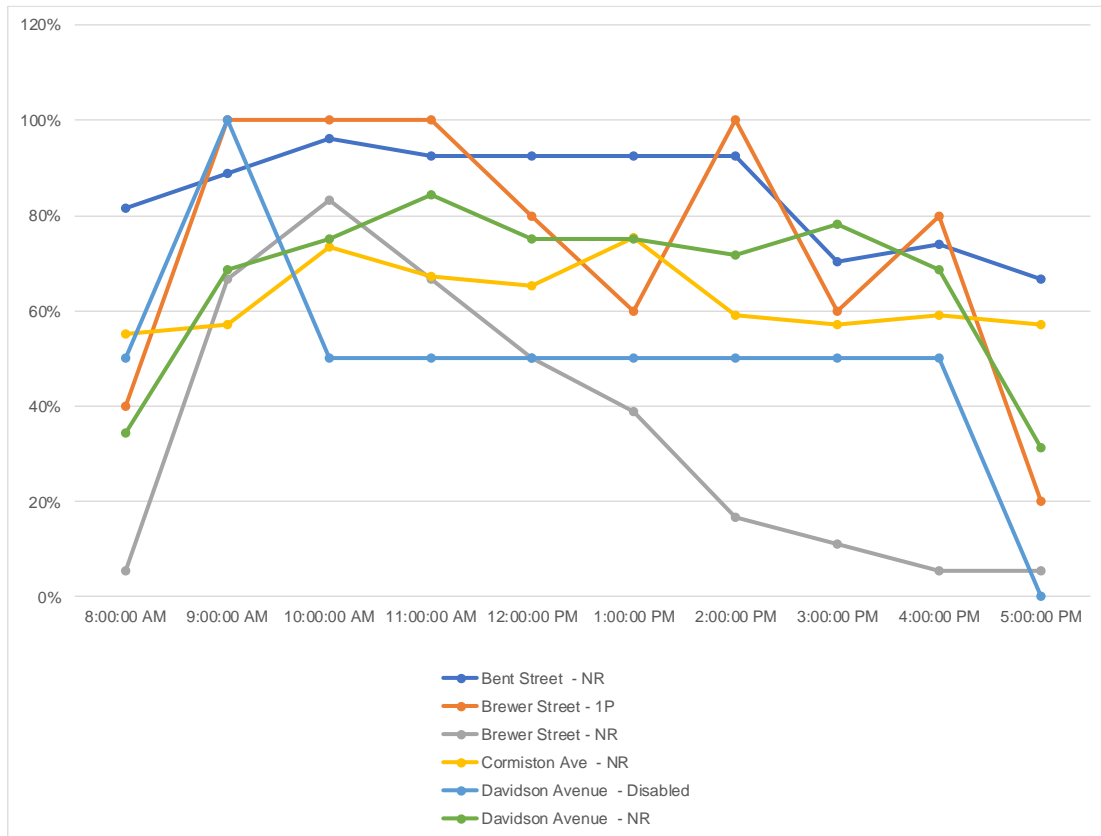
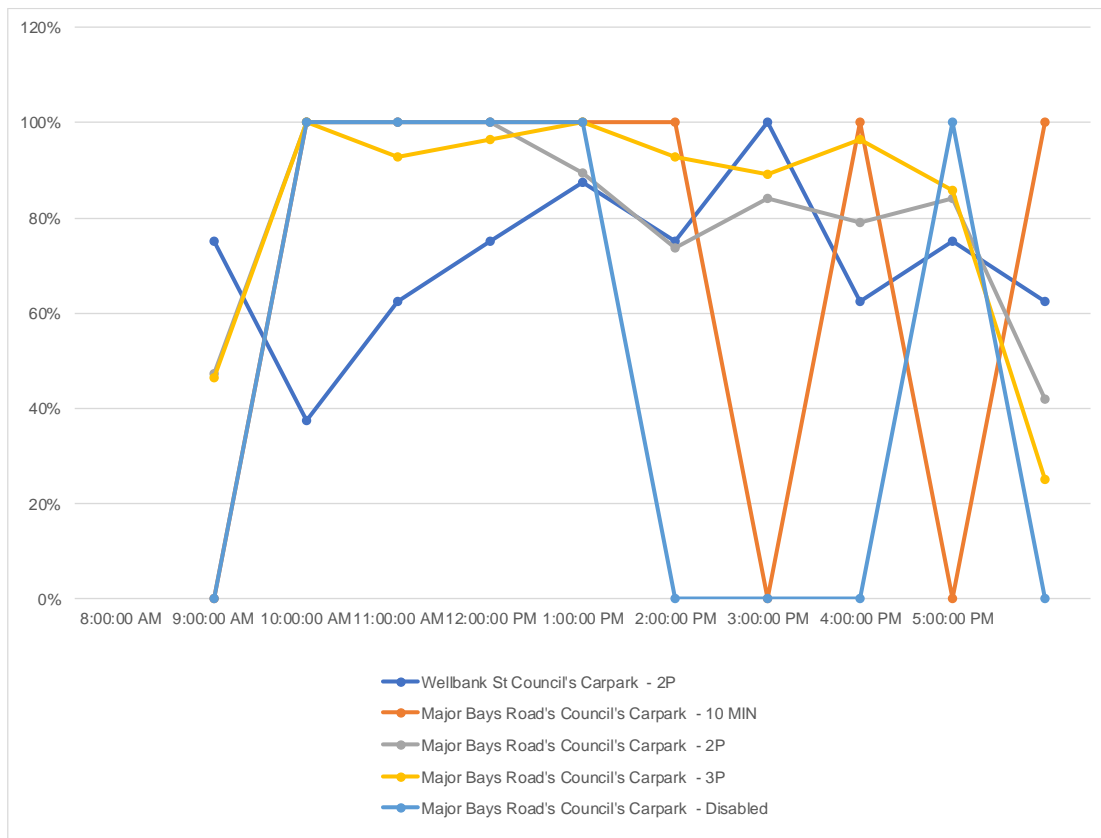
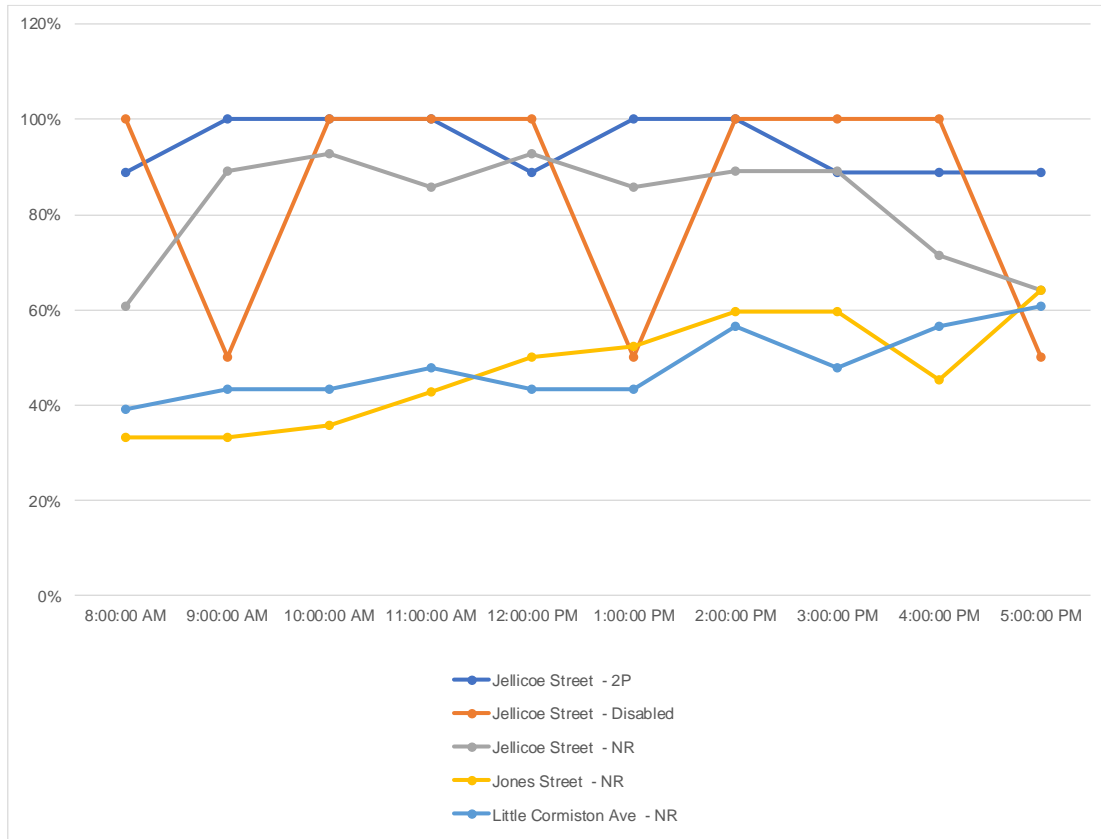


Figure D.3. Parking Occupancy Profile (%) by Roads on Saturday



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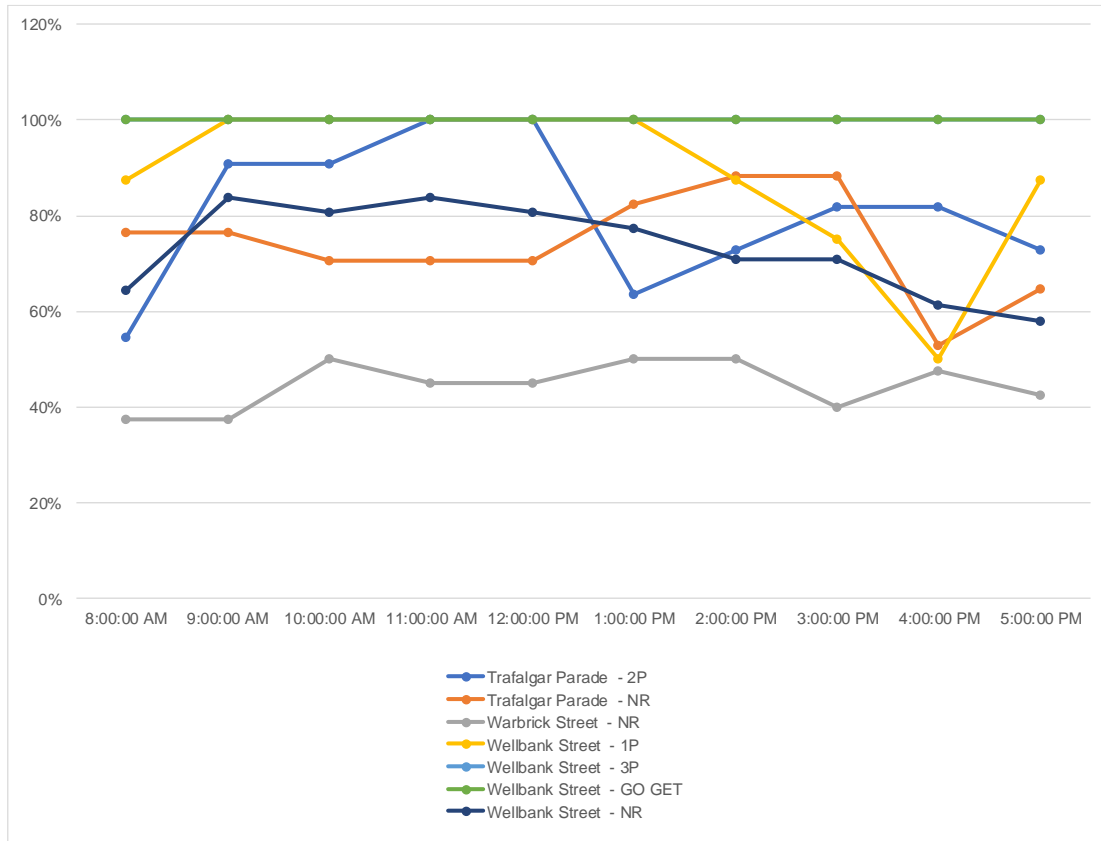
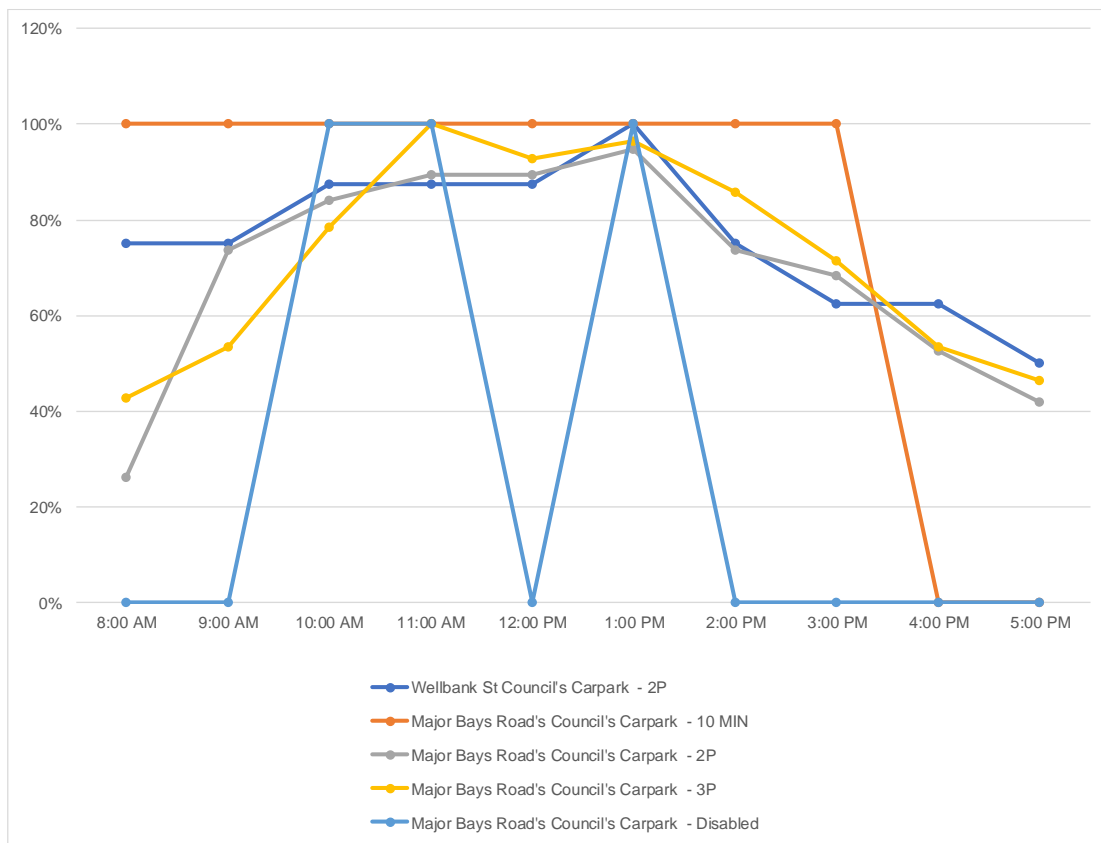
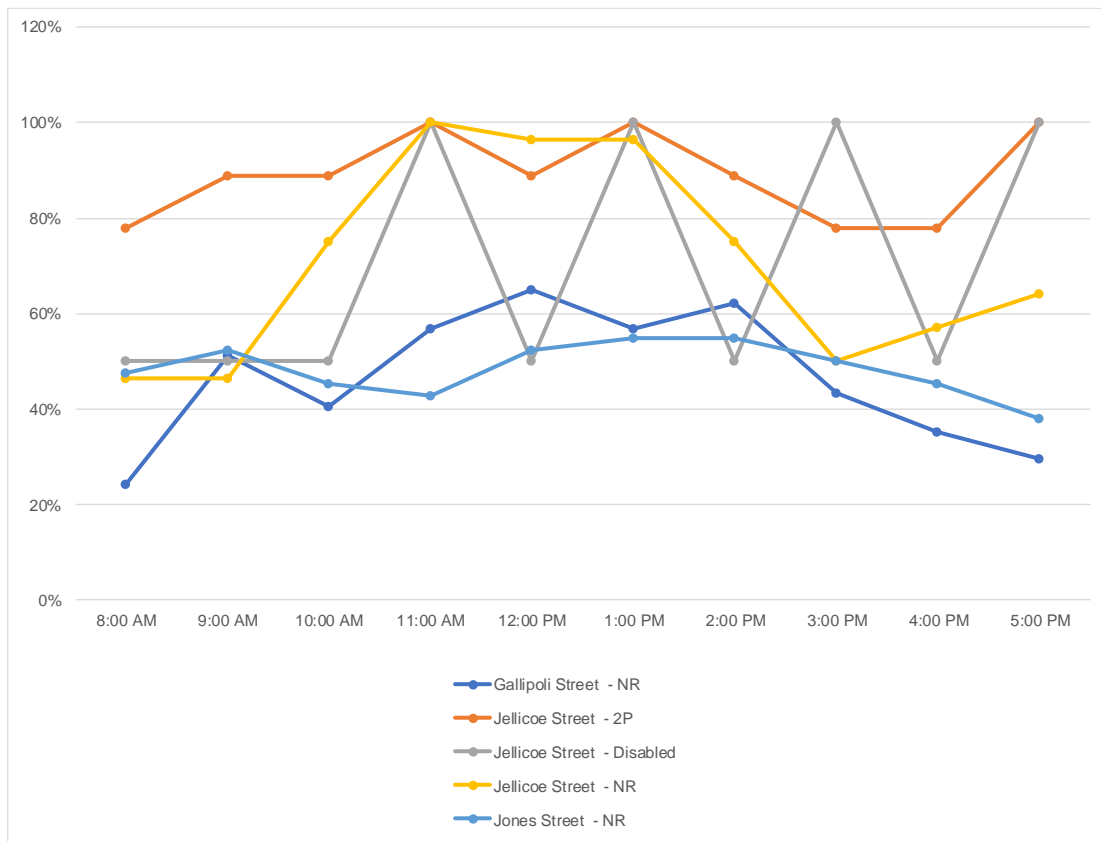
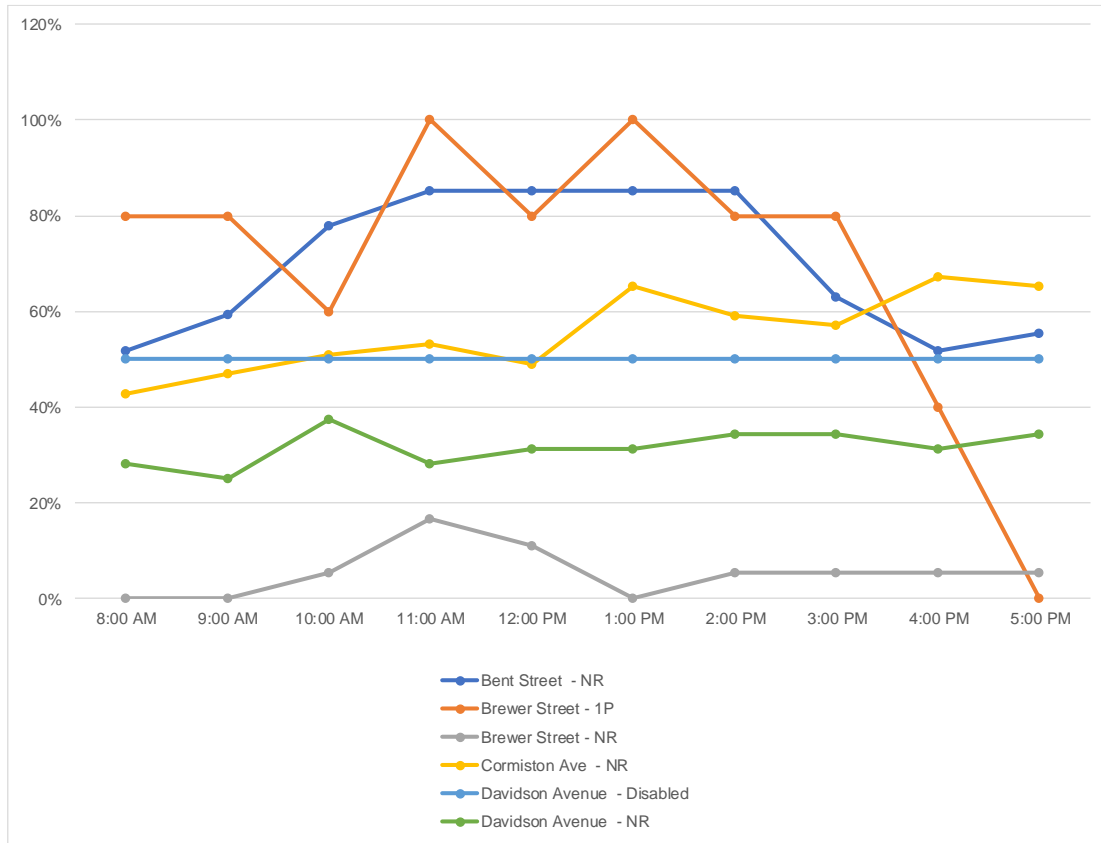


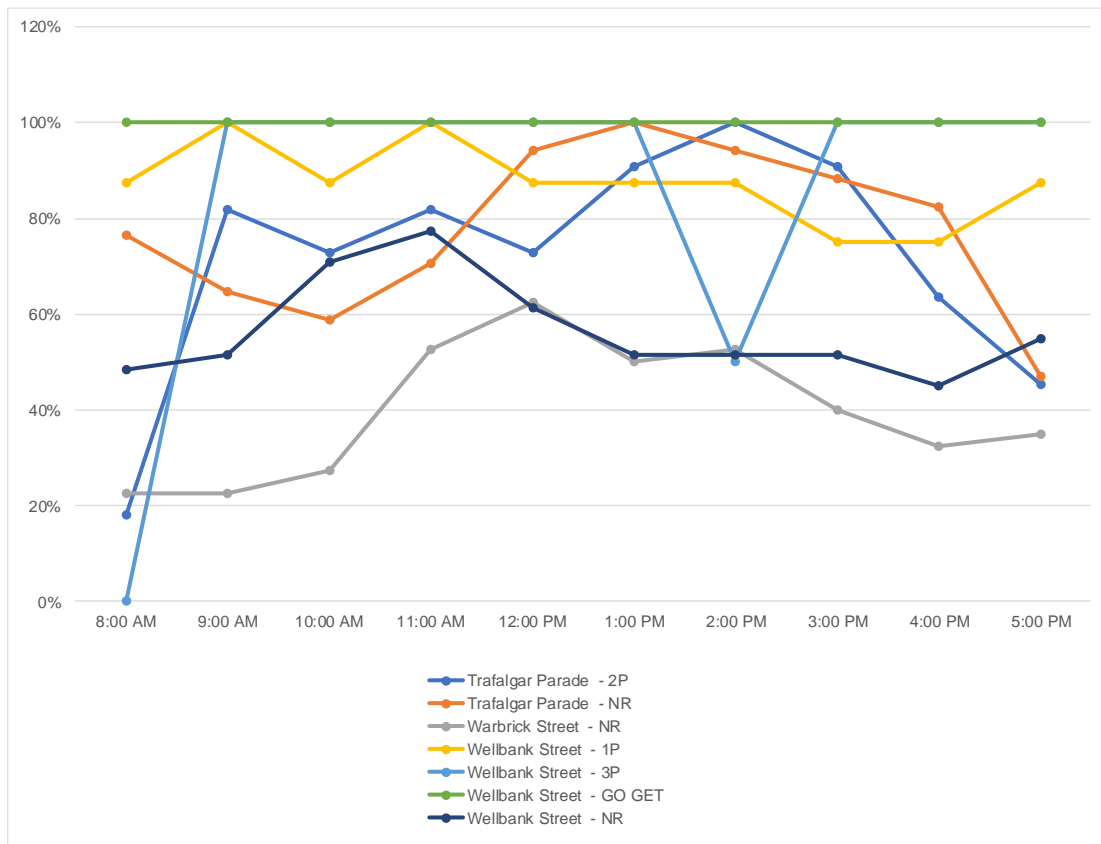
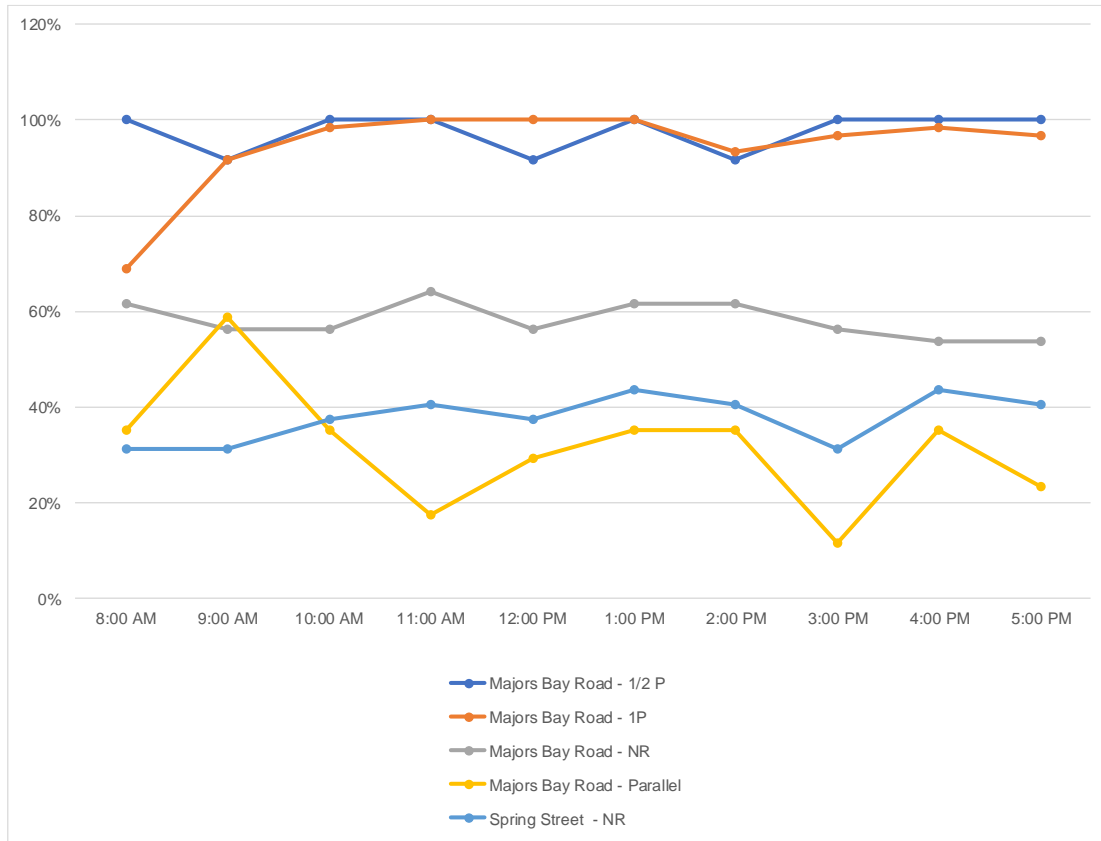
Figure D.4. Parking Occupancy Profile (%) by Roads on Sunday



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Appendix E

Summary of Peak-Hour Parking Occupancy

Table E.1. Wednesday – Peak-Hour Parking Occupancy by Road and Restriction

Road	Capacity	Peak-Hour Occupancy	Peak-Hour Occupancy (%)
Wellbank Street Carpark - 2P	8	3	38%
Brewer Street Carpark - 10-Minute	1	1	100%
Brewer Street Carpark - 2P	20	18	90%
Brewer Street Carpark - 3P	28	27	96%
Brewer Street Carpark - Disabled	1	1	100%
Bent Street - NR	27	27	100%
Brewer Street - 1P	5	4	80%
Brewer Street - NR	18	11	61%
Cormiston Ave - NR	39	27	69%
Davidson Avenue - Disabled	1	1	100%
Davidson Avenue - NR	33	19	58%
Gallipoli Street - NR	37	29	78%
Jellicoe Street - 2P	9	8	89%
Jellicoe Street - Disabled	2	2	100%
Jellicoe Street - NR	28	28	100%
Jones Street - NR	42	12	29%
Little Cormiston Ave - NR	23	17	74%
Majors Bay Road - 1/2P	12	12	100%
Majors Bay Road - 1P	62	55	89%
Majors Bay Road - NR	39	30	77%
Majors Bay Road - Parallel	17	17	100%
Majors Bay Road - Disabled	3	1	33%
Spring Street - NR	32	19	59%
Trafalgar Parade - 2P	11	9	82%
Trafalgar Parade - NR	17	14	82%
Warbrick Street - NR	40	30	75%
Wellbank Street - 1P	8	7	88%
Wellbank Street - 3P	2	2	100%
Wellbank Street - GO GET	1	1	100%
Wellbank Street - NR	31	23	74%
Total	597	455	76%

Table E.2. Thursday - Peak-Hour Parking Occupancy by Road and Restriction

Road	Capacity	Peak-Hour Occupancy	Peak-Hour Occupancy (%)
Wellbank Street Carpark - 2P	8	4	50%
Brewer Street Carpark - 10-Minute	1	1	100%
Brewer Street Carpark - 2P	20	20	100%
Brewer Street Carpark - 3P	28	28	100%
Brewer Street Carpark - Disabled	1	1	100%
Bent Street - NR	27	24	89%
Brewer Street - 1P	5	4	80%
Brewer Street - NR	18	15	83%
Cormiston Ave - NR	39	27	69%
Davidson Avenue - Disabled	1	1	100%
Davidson Avenue - NR	33	19	58%
Gallipoli Street - NR	37	36	97%
Jellicoe Street - 2P	9	9	100%
Jellicoe Street - Disabled	2	1	50%
Jellicoe Street - NR	28	27	96%
Jones Street - NR	42	11	26%
Little Cormiston Ave - NR	23	16	70%
Majors Bay Road - 1/2P	12	12	100%
Majors Bay Road - 1P	62	62	100%
Majors Bay Road - NR	39	33	85%
Majors Bay Road - Parallel	17	13	76%
Majors Bay Road - Disabled	3	3	100%
Spring Street - NR	32	19	59%
Trafalgar Parade - 2P	11	11	100%
Trafalgar Parade - NR	17	17	100%
Warbrick Street - NR	40	30	75%
Wellbank Street - 1P	8	8	100%
Wellbank Street - 3P	2	2	100%
Wellbank Street - GO GET	1	1	100%
Wellbank Street - NR	31	22	71%
Total	597	477	80%

Table E.3. Saturday - Peak-Hour Parking Occupancy by Road and Restriction

Road	Capacity	Peak-Hour Occupancy	Peak-Hour Occupancy (%)
Wellbank Street Carpark - 2P	8	6	75%
Brewer Street Carpark - 10-Minute	1	0	0%
Brewer Street Carpark - 2P	20	9	45%
Brewer Street Carpark - 3P	28	13	46%
Brewer Street Carpark - Disabled	1	0	0%
Bent Street - NR	27	22	81%
Brewer Street - 1P	5	2	40%
Brewer Street - NR	18	1	6%
Cormiston Ave - NR	39	27	69%
Davidson Avenue - Disabled	1	1	100%
Davidson Avenue - NR	33	11	33%
Gallipoli Street - NR	37	23	62%
Jellicoe Street - 2P	9	8	89%
Jellicoe Street - Disabled	2	2	100%
Jellicoe Street - NR	28	17	61%
Jones Street - NR	42	14	33%
Little Cormiston Ave - NR	23	9	39%
Majors Bay Road - 1/2P	12	11	92%
Majors Bay Road - 1P	62	54	87%
Majors Bay Road - NR	39	21	54%
Majors Bay Road - Parallel	17	9	53%
Majors Bay Road - Disabled	3	3	100%
Spring Street - NR	32	10	31%
Trafalgar Parade - 2P	11	6	55%
Trafalgar Parade - NR	17	13	76%
Warbrick Street - NR	40	15	38%
Wellbank Street - 1P	8	7	88%
Wellbank Street - 3P	2	2	100%
Wellbank Street - GO GET	1	1	100%
Wellbank Street - NR	31	20	65%
Total	597	337	56%

Table E.4. Sunday - Peak-Hour Parking Occupancy by Road and Restriction

Road	Capacity	Peak-Hour Occupancy	Peak-Hour Occupancy (%)
Wellbank Street Carpark - 2P	8	8	100%
Brewer Street Carpark - 10-Minute	1	1	100%
Brewer Street Carpark - 2P	20	18	90%
Brewer Street Carpark - 3P	28	27	96%
Brewer Street Carpark - Disabled	1	1	100%
Bent Street - NR	27	23	85%
Brewer Street - 1P	5	5	100%
Brewer Street - NR	18	0	0%
Cormiston Ave - NR	39	32	82%
Davidson Avenue - Disabled	1	1	100%
Davidson Avenue - NR	33	10	30%
Gallipoli Street - NR	37	21	57%
Jellicoe Street - 2P	9	9	100%
Jellicoe Street - Disabled	2	2	100%
Jellicoe Street - NR	28	27	96%
Jones Street - NR	42	23	55%
Little Cormiston Ave - NR	23	15	65%
Majors Bay Road - 1/2P	12	12	100%
Majors Bay Road - 1P	62	62	100%
Majors Bay Road - NR	39	24	62%
Majors Bay Road - Parallel	17	6	35%
Majors Bay Road - Disabled	3	3	100%
Spring Street - NR	32	14	44%
Trafalgar Parade - 2P	11	10	91%
Trafalgar Parade - NR	17	17	100%
Warbrick Street - NR	40	20	50%
Wellbank Street - 1P	8	7	88%
Wellbank Street - 3P	2	2	100%
Wellbank Street - GO GET	1	1	100%
Wellbank Street - NR	31	16	52%
Total	597	417	70%

Appendix F

Costs and Revenues Calculation

Car Park Finance Model - Introduction

Overview

From both a transport and an economic perspective, car parking should provide a return on capital for the owner and, ideally, be fully paid for by its users. In reality, almost all commercial or institutional parking in WA is either fully or partly subsidised for its users; particularly if one counts the value of land on which it stands. This financial model uses Excel software to assess customised and specific project costs and return for parking. This assessment could also show the value in undertaking travel behaviour management to reduce demand for parking.

Purpose of This model

This model has been created as a tool to assist planners in their assessment of required pricing strategies associated with the construction of new car parks.

The model has been prepared for the Department for Planning and Infrastructure.

This model needs to be customised for each application.

Layout of this Model

This model is set up as a series of linked spreadsheets as follows:

Input Data	<p>This page should be completed to contain all input information including:</p> <ul style="list-style-type: none">Construction costsSurvey, design, supervision costsFinance chargesOperating and Maintenance costsExisting Revenue (where appropriate)Future Revenue
Costs	<p>This page calculates construction, operation and maintenance costs</p>
Revenue	<p>This page calculates car park revenue including existing revenue where appropriate, i.e. in areas with existing parking</p>
Costs and Revenues	<p>This page is interactive. The user can input different parking charges to define breakeven positions in which revenue is equal to or exceeds costs</p> <p>Scenario 1</p> <p>All new costs are met by patrons in the new car park under consideration</p> <p>Scenario 2</p> <p>Existing car park charges are increased (as appropriate) to cover the costs of the new car park.</p>

Use of the Model

It is suggested that users make a copy of the base model under a separate and unique name prior to input of new data. In this way, the base model will not be accidentally corrupted.

Note

The default values are notionally from 2004. Please insert your own up to date estimates.

Car Park Finance Model - Input Data

Typical Construction Costs per bay

	\$ per bay	
	Low	High
At grade bay	\$2,500	\$4,500
Multi-storey car park	\$26,800	\$41,000

		810	1240
		12	12
		33	33
		9720	14880
\$11	\$9	26800	41000

Car Park Construction Details

	Low	High
What is the estimated cost per bay? Use table above or input own data	\$26,800	\$41,000
How many bays are to be constructed?		135 Bays
Survey, Design, Supervision (% of construction cost)		10 %

Finance Charges

Annual Percentage Rate	6.5 %
Number of Years for repayment	10 years

Operating and Maintenance Costs

	Low	Medium	High	
Maintenance Cost per Bay, per annum - small car park	\$ 200.00	\$ 300.00	\$ 400.00	small
Maintenance Cost per Bay, per annum - 900 bay car park	\$ 90.00	\$ 100.00	\$ 150.00	large

Existing Revenue

What revenue is currently generated?

This question is most applicable in areas which already have parking income from existing parking and this parking income can be used to subsidise or pay for the new parking being created.

	Staff	Visitors	Students	Other
Total number of bays				
Average fee paid per entry (or per hour)				
Average number of hours ("1" if daily fee)				
Average turnover of bays (a)				
Equivalent number of days per week (b)				
Equivalent number of weeks per year (c)				

- (a) Short term bays will turnover more often than all day bays, provided that there is an on-going demand e.g. morning demand, afternoon demand, evening demand. Note: not all bays will have multiple turnover.
 (b) Some parking areas are used Monday - Friday only; some have Saturday and Sunday use.
 (c) Most car parks have periods when they have lower or negligible use e.g. public holidays, school holidays

Future Revenue

What future revenue could be generated?

	Staff	Visitors	Students	Other
New bays to be added		180		
Average fee paid per entry (or per hour) (d)		\$ 2.50		
Average number of hours ("1" if daily fee)		1		
Average turnover of bays		5		
Equivalent number of days per week		5.5		
Equivalent number of weeks per year		49		

- (d) Initial estimate only
 (e) Check equal to bays in "Car Park Construction Details"

Car Park Finance Model - Costs

Construction Cost - New Car Park

New car park with	135	bays
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	Low (a)	High (b)
Construction	\$3,618,000	\$5,535,000
Survey, design, supervision	\$361,800	\$553,500
Total Cost (TC)	\$3,979,800	\$6,088,500

- (a) "Low" cost implies a very basic rectangular structure, basic security system, minimal architectural or landscape embellishment, basic fee collection system.
- (b) "High" cost implies a more complicated structure, advanced security system (24 hour), enhanced architectural and/or landscape embellishment, advanced fee collection system.

Total Cost (TC) Average of (a) and (b)	\$5,034,150	<i>Insert cost from table above (TC)</i>
Number of Years	20	
Interest Rate	7	%
Monthly Payment	\$ 37,533.27	
Annual Repayment (Finance Costs)	\$ 450,399.24	

Maintenance Costs - New Car Park

Car park size	small
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	low	medium	high
Maintenance costs per annum	\$27,000	\$40,500	\$54,000

Car Park Finance Model - Revenue

Existing Revenue

	Staff	Visitors	Students	Other
Total number of bays	0	0	0	0
Average fee paid per entry (or per hour)	\$ -	\$ -	\$ -	\$ -
Average number of hours ("1" if daily fee)	0	0	0	0
Average turnover of bays	0	0	0	0
Equivalent number of days per week	0	0	0	0
Equivalent number of weeks per year	0	0	0	0
TOTAL ANNUAL REVENUE	\$0	\$0	\$0	\$0

COMBINED TOTAL REVENUE	\$0
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Future Revenue

	Staff	Visitors	Students	Other
New bays to be added	0	135	0	0
Average fee paid per entry (or per hour)	\$ -	\$ 2.50	\$ -	\$ -
Average number of hours ("1" if daily fee)	0	1	0	0
Average turnover of bays	0	5	0	0
Equivalent number of days per week	0	5.5	0	0
Equivalent number of weeks per year	0	49	0	0
TOTAL NEW REVENUE	\$0	\$545,738	\$0	\$0

COMBINED TOTAL NEW REVENUE	\$545,738
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Car Park Finance Model - Costs and Revenues

Costs	low	medium	high
Annual Finance Costs	\$450,399	\$450,399	\$450,399
Annual Operating and Maintenance Costs	\$27,000	\$40,500	\$54,000
TOTAL Annual Costs	\$477,399	\$490,899	\$504,399

New Costs to be met by patrons in new car park

	Staff	Visitors	Students	Other
New bays to be added	0	135	0	0
Average fee paid per entry (or per hour)	\$ -	\$ 2.50	\$ -	\$ -
Average number of hours ("1" if daily fee)	0	1	0	0
Average turnover of bays	0	5	0	0
Equivalent number of days per week	0	5.5	0	0
Equivalent number of weeks per year	0	49	0	0
TOTAL NEW REVENUE	\$0	\$545,738	\$0	\$0

COMBINED TOTAL NEW REVENUE	\$545,738
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EDIT AVERAGE DAILY FEE UNTIL REVENUES EQUALS OR EXCEEDS COSTS

Difference Revenue - Costs (a)	\$54,838
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(a) Revenue exceeds costs when difference becomes "+ve"

"Medium" level of costs, i.e. "medium" maintenance costs