



Baw Baw Shire Council

Yarragon CBD Parking Study

September 2022

Draft Final Report

1.0 Executive Summary

Baw Baw Shire Council engaged HDS Australia in March 2022 to undertake a parking study for the township of Yarragon.

The objectives of the parking study are to:

- Review the existing parking arrangements to identify deficiencies and areas needing improvement;
- Understand the current and future parking needs of the community; and,
- Provide an effective parking regime to suit the needs of all users, including residents, commuters, business owners, visitors and tourists.

Based on the study findings and feedback received from the wider community the following recommendations proposed include;

- Increase parking enforcement, as well as develop new initiatives and community education to ensure best parking practices;
- Convert unrestricted parking spaces on Princes Highway Service Road to time restricted spaces;
- Convert 4 unrestricted parking spaces on Loch Street to long vehicle parking spaces;
- Convert unrestricted parking spaces in Loch Street carpark and Hanns Lane northwest carpark to 2P;
- Reconstruction of Campbell Street and keep all on-street parking as 1P;
- Construction of angle parking on south side of Hanns Lane near Rollo Street;
- Rectify all signage deficiencies; and,
- Improve parking wayfinding signage.

These recommendations are discussed further in detail as per section 7.0 of the report.

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2.0 Background

2.1 Introduction

Baw Baw Shire is at an annual population growth rate of 2.94% and the population of Baw Baw Shire is expected to grow to 71,683 by 2036¹. 2021 Census data reveals a population of 1,893 within the suburb / locality of Yarragon. New residential developments are growing within Baw Baw Shire, including Yarragon to accommodate for expected population growth. As such, parking demand will grow with the population, signifying the importance of the parking study. Council has consequently engaged HDS Australia to undertake a parking study for the townships of Drouin, Trafalgar and Yarragon. This report presents the findings of the parking study for Yarragon.

The objectives of the parking study are to:

- Review the existing parking arrangements to identify deficiencies and areas needing improvement;
- Understand the current and future parking needs of the community; and,
- Provide an effective parking regime to suit the needs of all users, including residents, commuters, business owners, visitors and tourists.

2.2 Policy Documents

Several relevant documents were reviewed prior to the completion of this report, ensuring all recommendations align with the Council's Plan. The documents listed below have been reviewed:

- Baw Baw Shire Council Integrated Transport Plan (2011)
- Baw Baw 2050
- Council Plan 2021-2025
- Path and Trials Strategy 2019
- Baw Baw Planning Scheme
- Settlement Management Plan (August 2013)
- VicRoads Rest Area Strategy
- Yarragon Township Plan 2022

¹ Baw Baw Shire Council Settlement Plan, August 2013, Page 4

2.3 Study Area

The Yarragon CBD Parking Study area includes all the major business areas located in the town, with some residential areas also included. The study area for Yarragon starts at Loch Street to the west, Waterloo Road to the North, Rollo Street to the east, Princes Highway Services Road, and Hanns Lane to the south, while including a small section of Campbell Street as well. This study area was chosen to account for the highest traffic density areas within Yarragon, this being predominately around the local businesses, attracting both employees and customers. Additionally, these areas attract a high number of visitors requiring parking. According to the Baw Baw Planning Scheme, Yarragon is considered a secondary town with moderate growth. It is described as a strong tourist-oriented shopping destination, suggesting a lot of parking spaces will be used by passer-by visitors. Yarragon CBD's main employment industries include supermarket/grocery stores, local businesses, cafes and eateries (2011, Census). A combination of short term and long-term parking is required to account for the wide range of activities visitors will undertake within Yarragon.

The parking spaces within the Yarragon CBD Parking Study area includes a combination of on-street and off-street parking. On-street parking can be seen around the entire study area, while many of the off-street parking zones are located around shopping areas.

Figure 1 below displays the Parking Study area for Yarragon.



Figure 1 – Yarragon Parking Study Area

3.0 Existing Conditions

3.1 Current Parking Restrictions

The current parking restrictions within the Yarragon Study Area are as shown in Figure 2 below.



Figure 2 – Current Parking Restrictions in Yarragon

3.2 Off-Street Parking Access and Wayfinding

Off-street parking near the Yarragon town centre area is available off Hanns Lane, located at the back of the shops on the Main Street (Princes Highway service road). The carpark also features parking spots for long vehicles. Dedicated parking facilities for long vehicles are also available in this carpark, however they should be directed to access the facilities via Loch Street due to their poor manoeuvrability.

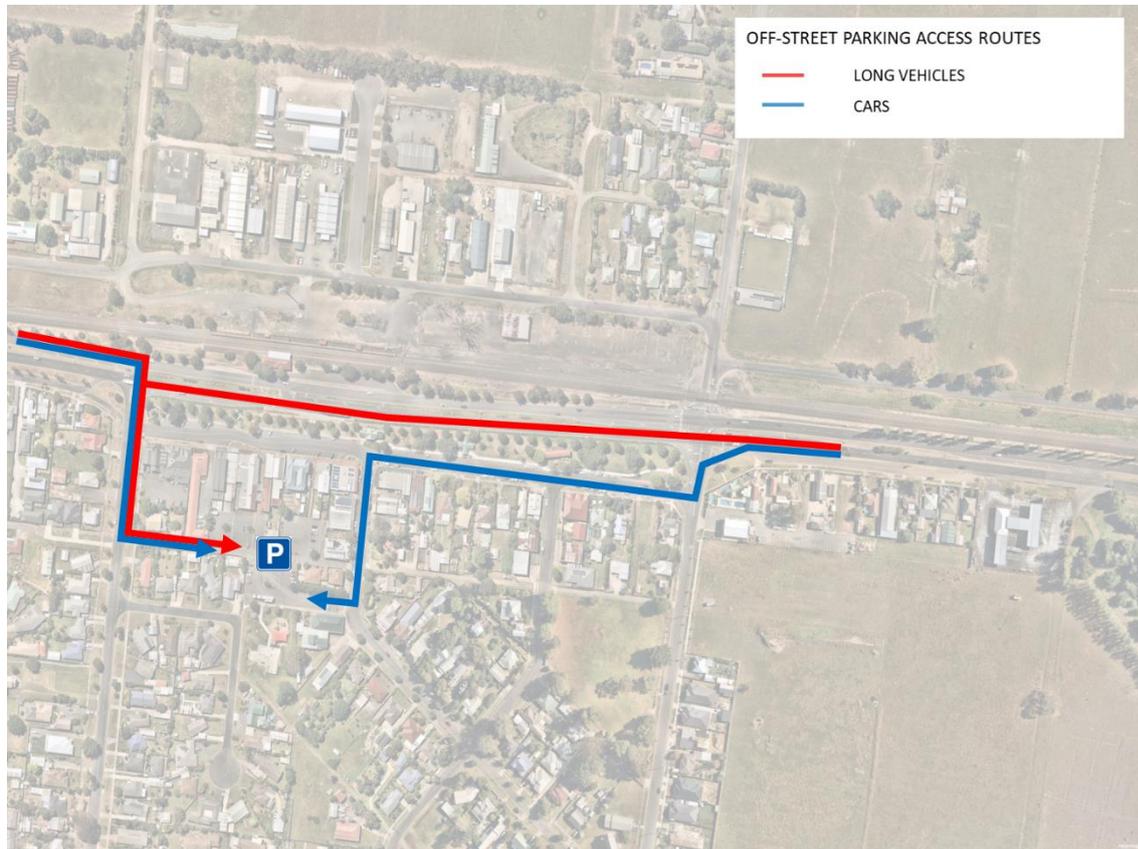


Figure 3 – Off-street carpark access for general traffic and long vehicles

Parking wayfinding signage is important to allow motorists to easily find and access these off-street parking facilities. Wayfinding signage near the town centre is generally good, as shown in Figure 4 below, however several improvements are needed particularly for advising Princes Highway traffic of parking facilities available within the township. The proposed changes to improve parking wayfinding are illustrated in Figure 5 below.



Figure 4 – Existing parking wayfinding signage

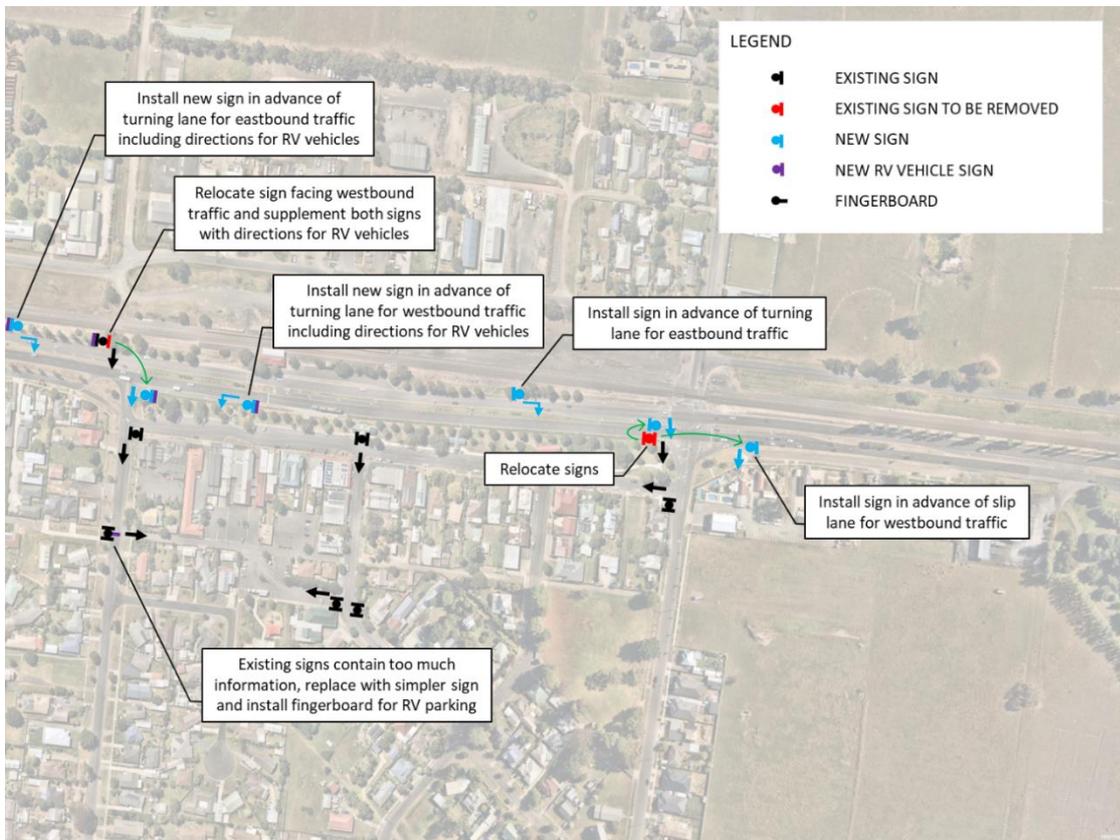


Figure 5 – Proposed parking wayfinding signage improvements

3.3 Disability Parking

The locations of existing disabled spaces within the Yarragon study area are listed in Table 1 below.

Table 1 - Location of disability parking bays

Location	No. of spaces	Comments
Princes Highway service road, south side, west of Campbell Street	2	
Princes Highway service road, north side, opposite Village Walk	1	
Yarragon Bakery rear carpark	1	
Village Walk rear carpark	2	
Yarragon Hotel rear carpark	1	Hotel patrons only
Yarragon Public Hall carpark	2	
TOTAL	9	

It is assumed that these disabled bays provide a suitable spatial separation as to allow access to nearby facilities without restricting the efficient use of available spaces by other users.

3.4 Parking Signage

As part of the 2022 Parking Study, incorrect or non-standard parking signs within the study area have been identified. These deficiencies are detailed in the table below.

Table 2 – Location of signage deficiencies identified

Location	Deficiency
Princes Highway Service Road, northern side, west of Murray Street	The 2P zone on the northern side does not have a sign with left arrow at the eastern end of the zone.
Princes Highway Service Road, northern side, opposite Yarragon Motel	Parking sign between the angled parking and motorcycle parking is missing. Historical image from Google Streetview shows that a sign was previously present.
Princes Highway Service Road, southern side, adjacent Yarragon Hotel	The 1P angled parking zone does not have a sign with left arrow at the western end of the zone.

4.0 Community Input

4.1 Introduction

Public consultation is key in determining both users' expectations and developing measures to create an effective parking regime.

Prior to the commencement of the parking survey data collection in May 2022, Council undertook initial public surveys in April 2022 through Council's 'Have Your Say' process and a community pop-up session was held at Yarragon Public Hall on 26 April 2022. Further, public exhibition of the draft report is planned to be undertaken from 13 October 2022 to 11 November 2022 (to be updated).

This consultation served as an open forum for wider community and key stakeholders to express their concerns regarding parking within Yarragon CBD.

4.2 Key Community Comments

The community pop-up session was held in Yarragon at the Public Hall between 16:00 to 18:00 on 26 April 2022. The general theme of comments provided to Council are summarised below:

- Resident suggested having angled parking to provide more availability on Princes Highway Service Road near Rollo St.
- Discussion on proposed Foodworks supermarket and a 10-unit development on Princes Highway Service Road.
- Option for angled parking on Hanns Lane on the south side between Murray Street and Rollo Street.
- Spaces for recreational vehicle (caravan) overnight parking.
- Campbell Street reconstruction.

The 'Have Your Say' public consultation period for the Yarragon CBD Parking study was conducted from Monday 11 April 2022 to Sunday 1 May 2022. In total, 27 responses were received during the public consultation period. Concerns were raised by participants on several issues, namely inadequate parking restrictions, requests to look into additional areas for different type of vehicle parking for the future, and lack of parking signage within the township. Each of the responses received from the public made at least one comment regarding the parking study, with some having multiple comments. The comments have been categorised into the prominent concern categories below as most of the responses fell under these categories.

Figure 6 below shows a compilation of the community comments in a graph.

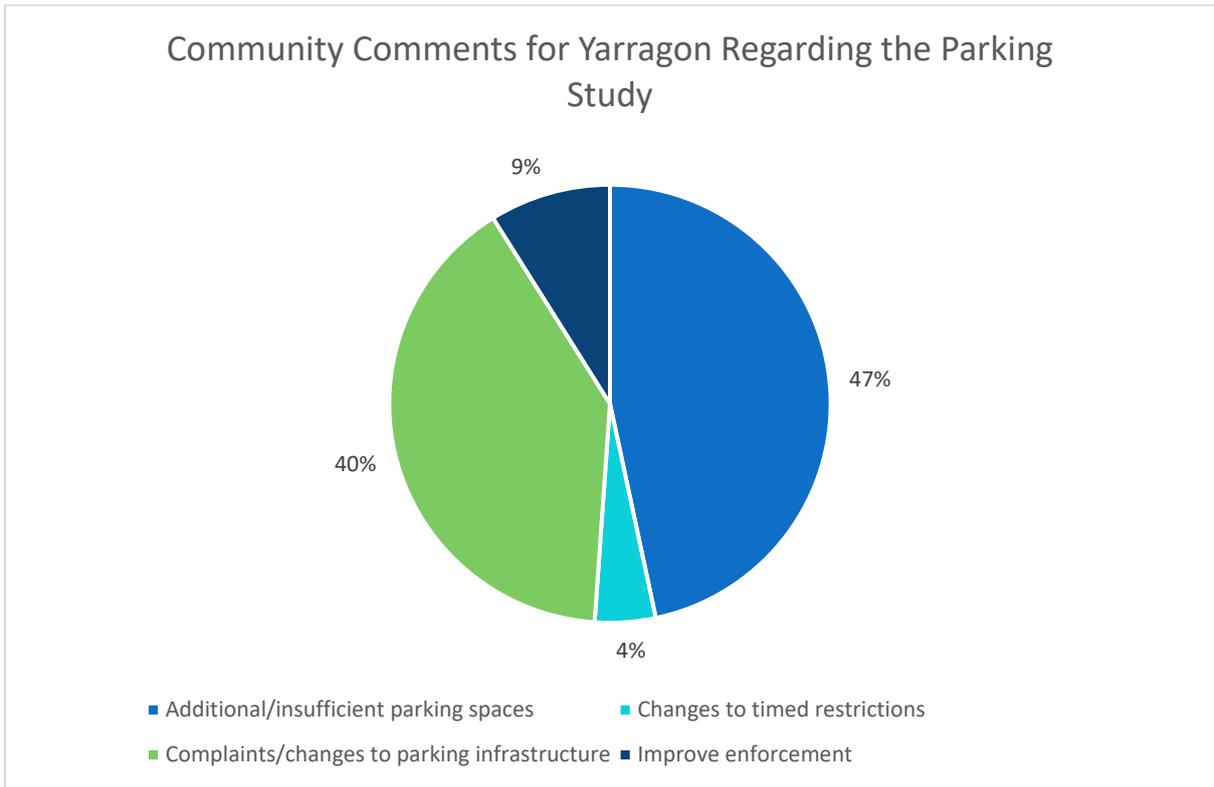


Figure 6 – Community Comments for Parking Study Graph

XXX comments were received during the public exhibition period for the draft Yarragon CBD Parking Study report (to be updated).

5.0 Parking Surveys

5.1 Introduction

The demand for parking in the Yarragon CBD is driven by several user types and factors relating to a range of land use types, such as business proprietors, goods deliveries, employees, customers, visitors, and transient tourists. The CBD hosts different types of business with workers and customers seeking parking close to their desired destination. Some of these businesses include restaurants and cafes, medical centres, post offices, supermarkets, petrol stations, entertainment businesses, public halls, and churches.

The parking study zone for Yarragon starts at Loch Street to the west, Waterloo Road to the North, Rollo Street to the east, while including Princes Highway Services Road, and Hanns Lane to the south, while including a small section of Campbell Street as well.

Within the study area, a total of 466 parking spaces were found. These included a range of different parking restriction types and a combination of publicly and privately owned parking. An example of private parking is the Yarragon Hotel, which contains 27 – 3P spaces, and three reserved Yarragon Hotel spaces. Additionally, out of the 466 total parking spaces, 229 are on-street parking, while 237 off-street parking. The existing parking restrictions for the study area can be seen in Figure 2 in section 3.0 of the report.

5.2 Car parking surveys

Parking surveys were performed within the study area of Yarragon to get an understanding of the current parking habits and to develop a strategy to meet current and future user requirements. These surveys were completed and collected data over a 5-day period at hourly intervals, during the week starting on Monday 2nd May 2022, from 8:00AM– 6:00PM. This was done for all 466 parking spaces.

5.3 Exiting Parking Supply

5.3.1 Overview

Private vehicles are the main choice of transport to and from Yarragon CBD, hence the importance on available and convenient parking. Many nearby residents choose to walk or cycle as their preferred transport choice due to their proximity to the CBD. These sustainable forms of transport are not only welcomed but should be encouraged to help reduce the demand on parking and to promote a healthy lifestyle. Additionally, public transport remains another transport mode that should be encouraged to help reduce the demand on parking for private vehicles.

It is noted that public transport and active transport options are limited within the Baw Baw Shire Council area due to many of the towns' peri-urban nature. As such, there will continue to be high dependency on private vehicles users in need of convenient parking which needs to be managed to meet the needs of the community and local business operators.

5.3.2 Review of Parking Restrictions

The supply distribution for the various parking categories is shown in Table 3 below for the study area. Unrestricted parking makes up most of the supply, representing 63.5% of all the available parking spaces. Evidently, this is significantly greater than the next biggest parking supply category, with 1P making up 11.8%, closely followed by 2P making up 10.9% of all parking supply. This report will also cover the parking study analysis for the greatest demand for parking by restriction type and the duration of stay of most patrons in the CBD area.

Table 3 – Supply of Parking by Restriction Type

Parking Restriction	Study Area	
	Supply	% of Total Supply
Unrestricted	296	63.5%
2P	51	10.9%
1P	55	11.8%
P10Mins	2	0.4%
Disabled Bays	10	2.1%
Hotel Reserved Parking	2	0.4%
3P Long Vehicles	4	0.9%
No Stopping	19	4.1%
3P Yarragon Hotel Parking	27	5.8%
Total	466	100%

5.3.3 Total Study Area Occupancy Rates

Figure 7 below displays the parking occupancy rates across each day and hour for all parking spaces within the study area.

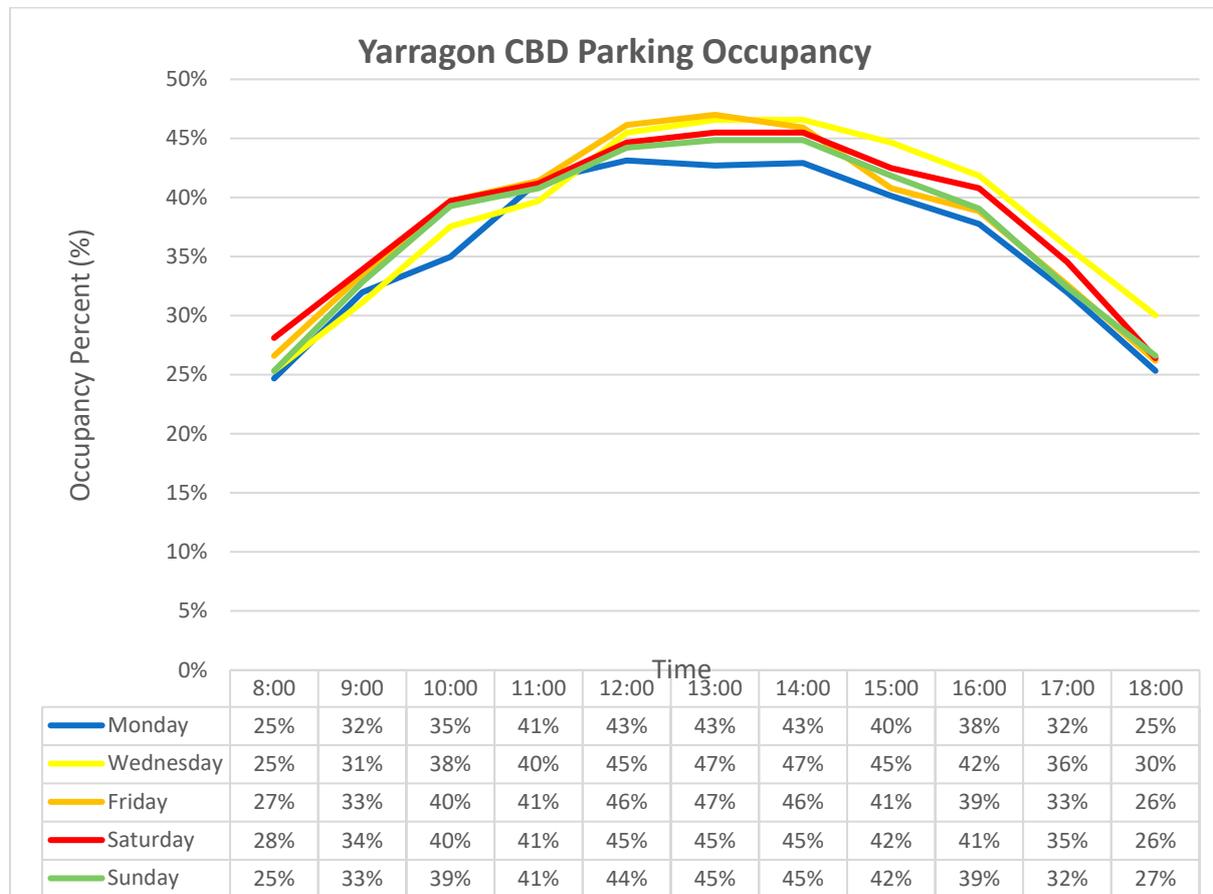


Figure 7 – Parking Occupancy Graph for each day in the study area

As can be seen in Figure 7, The highest occupancy rate was recorded at 47% around midday on Wednesday and Friday. Additionally, the busiest period was consistently recorded between 12:00-14:00pm on each day, with peak occupancy rates averaging around 46% percent.

Please refer to Appendix A for detailed occupancy rates per day by hourly intervals for the entire study.

5.4 Parking Supply and Demand Analysis

Table 4 below displays each parking restriction and their respective supply, average occupancy rate over the 5-day period, and the highest daily occupancy rate at any given time for the study area.

Table 4 – Peak Parking Demand and Supply in Yarragon CBD

Parking Restriction	Yarragon Study Area		
	Supply	Average Daily Occupancy (over 5 days)	Highest Daily Occupancy
Unrestricted	296	33%	38%
2P	51	69%	78%
1P	55	66%	85%
P10Mins	2	83%	100%
Disabled Bays	10	29%	34%
Hotel Reserve Parking	2	26%	64%
3P Long Vehicle	4	10%	25%
No Stopping (part time)	19	15%	20%
3P Yarra Hotel	27	39%	55%
TOTAL	466		

Key observations from Table 4 include:

- Unrestricted parking makes up the vast majority of all parking in the study area (296 spaces), including the off-street parking on Hanns Lane. Additionally, this includes most of the off-street parking available on Loch Street, Rollo Street, Waterloo Road, Campbell Street, Murray Street and Princes Highway Service Road.
- 63.5% of all parking supply in the study area is unrestricted parking and has an average occupancy rate of 33%.
- All 1P restricted parking is on-street parking and is mostly found on the southern side of Princes Highway Service Road, with some located on Campbell Street. A total of 55 spaces are found with an average occupancy rate of 66%.
- All 2P restricted parking is on-street parking and is located on the northern side of Princes Highway Service Road between Loch Street and Murray Street. Of the top three parking categories by supply, 2P has the highest demand with an average occupancy rate of 69%. The total supply for 2P parking is 51.
- The peak periods in Yarragon occur between 12:00-14:00pm which sees approximately 40 out of 51 available 2P spaces occupied, and 47 out of the 55 1P spaces occupied.
- During the peak period in the study area, approximately 3 out of the 10 available disability parking spaces are occupied.

Please refer to Appendix B for spatial representation of average occupancy rates for each study date

5.5 Observed Parking Trends

5.5.1 Duration of stay

The duration of stay data shows current parking habits being practiced by the community. This is important information for creating an efficient parking management plan as it displays whether current parking restrictions meet the needs of the community. The following tables and figures show the duration of stay over the study area across the 5-day period between the hours of 8am to 6pm.

5.5.1.1 Monday 2nd May 2022

A total turnover of 766 vehicles over the course of the day was seen on the Monday. About 64% of all vehicles parked for 1 hour or less, 14% staying 2 hours or less and 8% staying 3 hours or less. There was a total of 4 cars that stayed for 10 hours or more in the same car parking spot over the course of the day.

Table 5 – Observed Duration of Stay (Hours) – Monday 2nd May 2022

Duration	<=1h	1-2h	2-3h	3-4h	4-5h	5-6h	6-7h	7-8h	8-9h	>= 10h
Total Turn Over	766	766	766	766	766	766	766	766	766	766
Vehicles @ DOS	497	107	64	44	22	15	8	3	2	4
Percentage	64%	14%	8%	6%	3%	2%	1%	0%	0%	1%

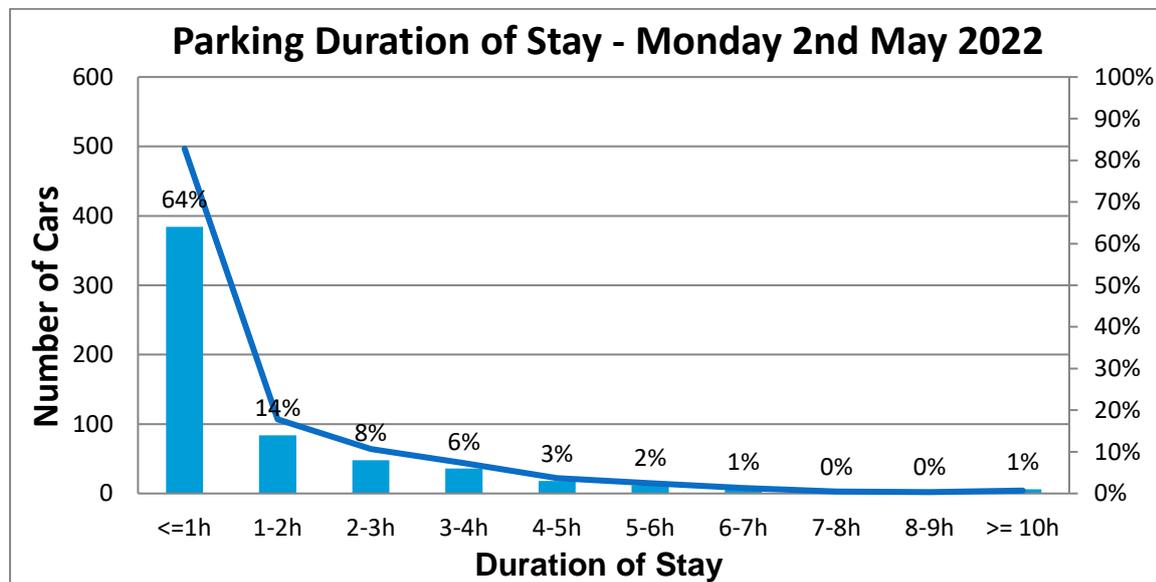


Figure 8 – Observed Duration of Stay (hours) – Monday 2nd May 2022

5.5.1.2 Wednesday 4th May 2022

There was a total turnover of 794 vehicles over the course of the day. Similarly to Monday, on the Wednesday about 63% of all vehicles parked for 1 hour or less, 17% staying 2 hours or less and 8% staying 3 hours or less. There was a total of three cars that stayed for 10 hours or more in the same car parking spot over the course of the day.

Table 6 – Observed Duration of Stay (Hours) – Wednesday 4th May 2022

Duration	<=1h	1-2h	2-3h	3-4h	4-5h	5-6h	6-7h	7-8h	8-9h	>= 10h
Total Turn Over	794	794	794	794	794	794	794	794	794	794
Vehicles @ DOS	501	132	60	38	23	22	9	6	0	3
Percentage	63%	17%	8%	5%	3%	3%	1%	1%	0%	0%

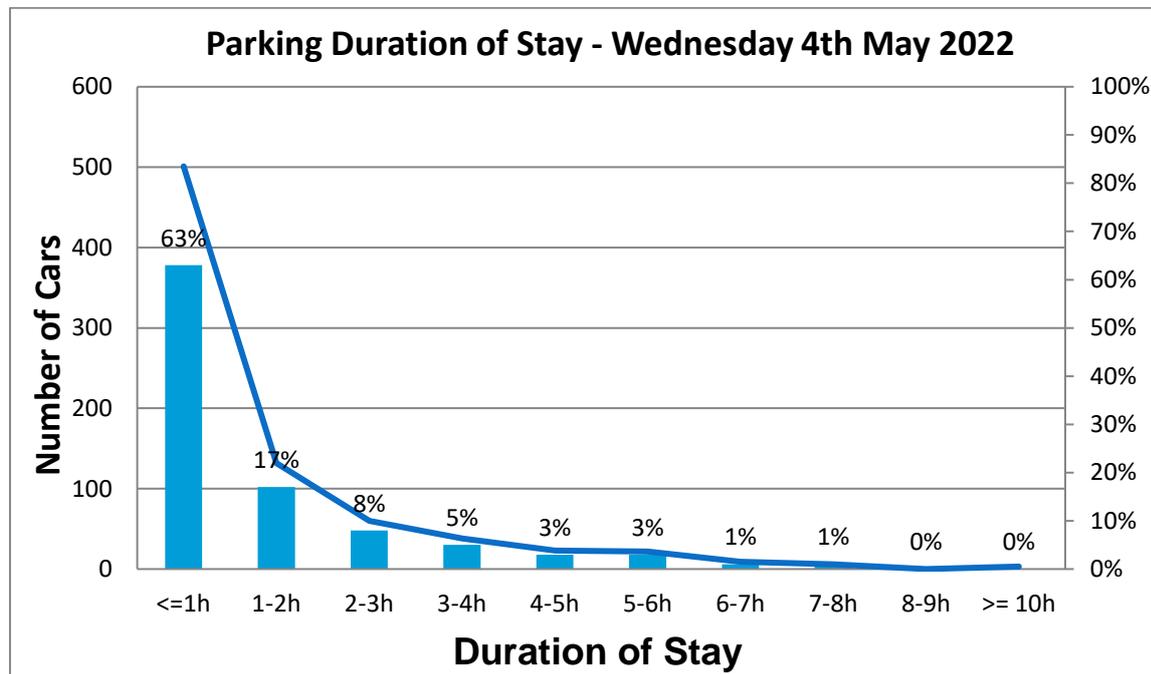


Figure 9 – Observed Duration of Stay (hours) – Wednesday 4th May 2022

5.5.1.3 Friday 6th May 2022

There was a total turnover of 842 vehicles over the course of the day. Similarly to Monday and Wednesday on the Friday about 68% of all vehicles parked for 1 hour or less, 12% staying 2 hours or less and 7% staying 3 hours or less. There was a total of two cars that stayed for 10 hours or more in the same car parking spot over the course of the day.

Table 7 – Observed Duration of Stay (Hours) – Friday 6th May 2022

Duration	<=1h	1-2h	2-3h	3-4h	4-5h	5-6h	6-7h	7-8h	8-9h	>= 10h
Total Turn Over	842	842	842	842	842	842	842	842	842	842
Vehicles @ DOS	579	105	59	44	27	10	11	4	1	2
Percentage	68%	12%	7%	5%	3%	1%	1%	0%	0%	0%

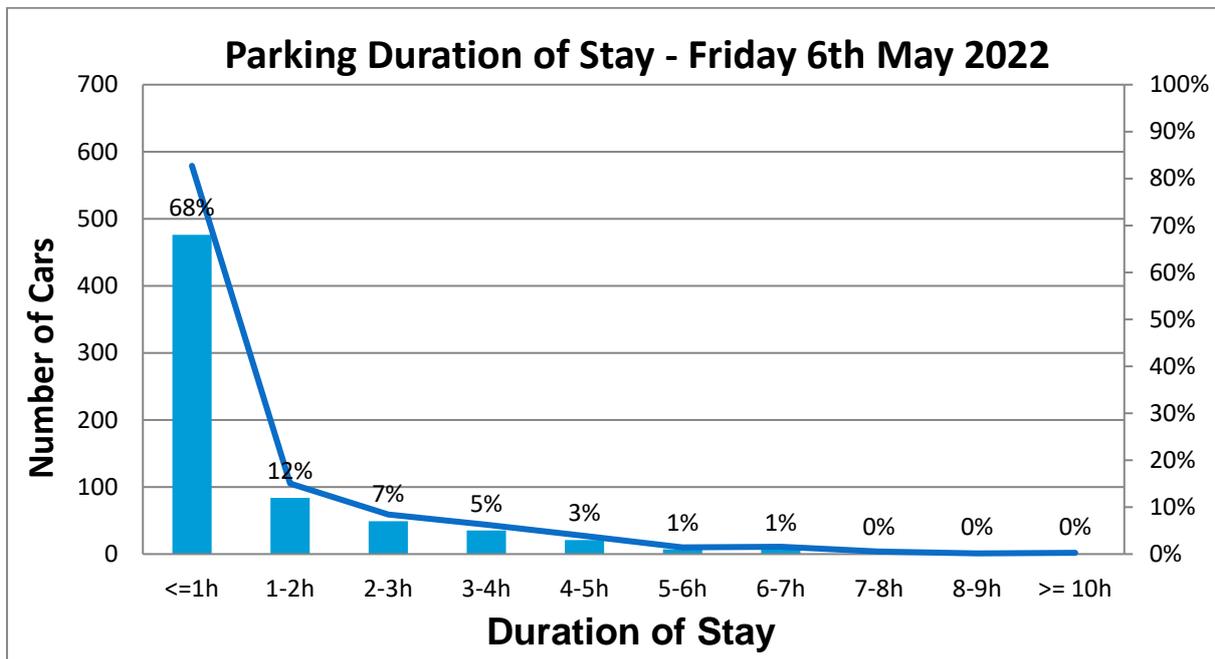


Figure 10 – Observed Duration of Stay (hours) – Friday 6th May 2022

5.5.1.4 Saturday 7th May 2022

There was a total turnover of 714 vehicles over the course of the day. About 55% of all vehicles parked for 1 hour or less, 18% staying 2 hours or less and 11% staying 3 hours or less. There was a total of four cars that stayed for 10 hours or more in the same car parking spot over the course of the day.

Table 8 – Observed Duration of Stay (Hours) – Saturday 7th May 2022

Duration	<=1h	1-2h	2-3h	3-4h	4-5h	5-6h	6-7h	7-8h	8-9h	>= 10h
Total Turn Over	714	714	714	714	714	714	714	714	714	714
Vehicles @ DOS	398	131	81	44	23	17	8	6	2	4
Percentage	55%	18%	11%	6%	3%	2%	1%	1%	0%	1%

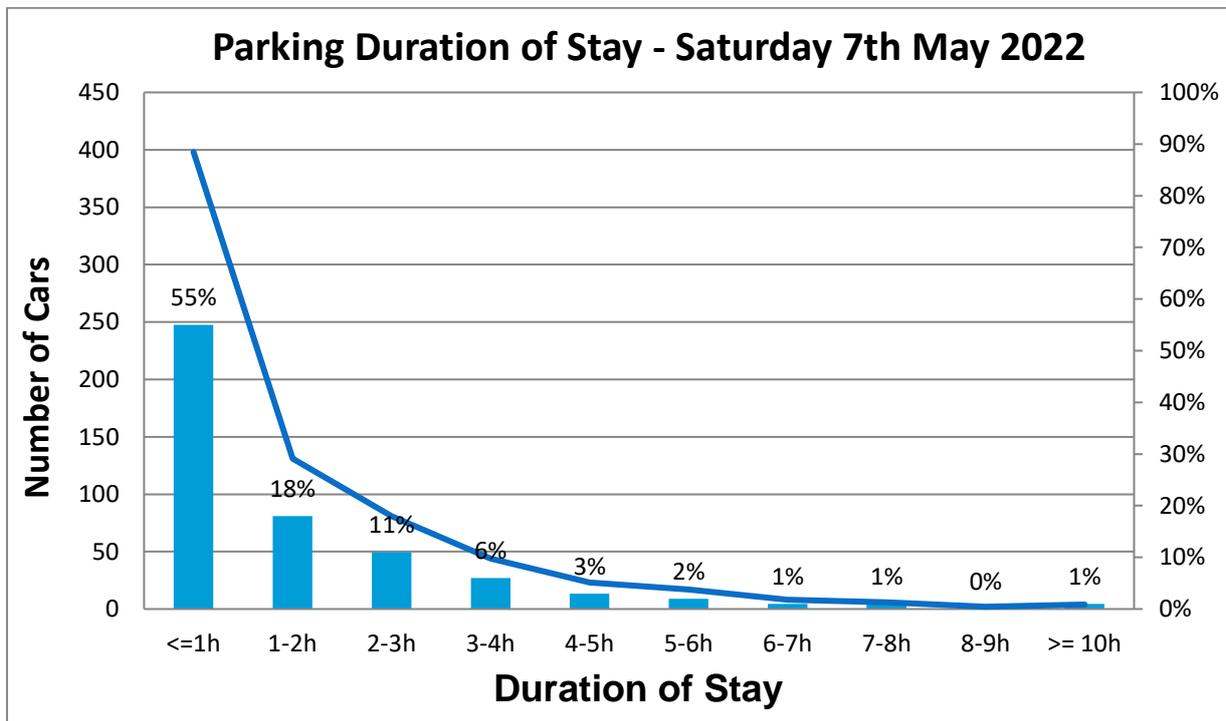


Figure 11 – Observed Duration of Stay (hours) – Saturday 7th May 2022

5.5.1.5 Sunday 8th May 2022

There was a total turnover of 426 vehicles over the course of the day. About 22% of all vehicles parked for 1 hour or less, 18% staying 2 hours or less and 17% staying 3 hours or less. There was a total of 17 cars that stayed for 10 hours or more in the same car parking spot over the course of the day.

Table 9 – Observed Duration of Stay (Hours) – Sunday 8th May 2022

Duration	<=1h	1-2h	2-3h	3-4h	4-5h	5-6h	6-7h	7-8h	8-9h	>= 10h
Total Turn Over	426	426	426	426	426	426	426	426	426	426
Vehicles @ DOS	96	76	72	48	50	36	14	13	4	17
Percentage	22%	18%	17%	11%	12%	8%	3%	3%	1%	4%

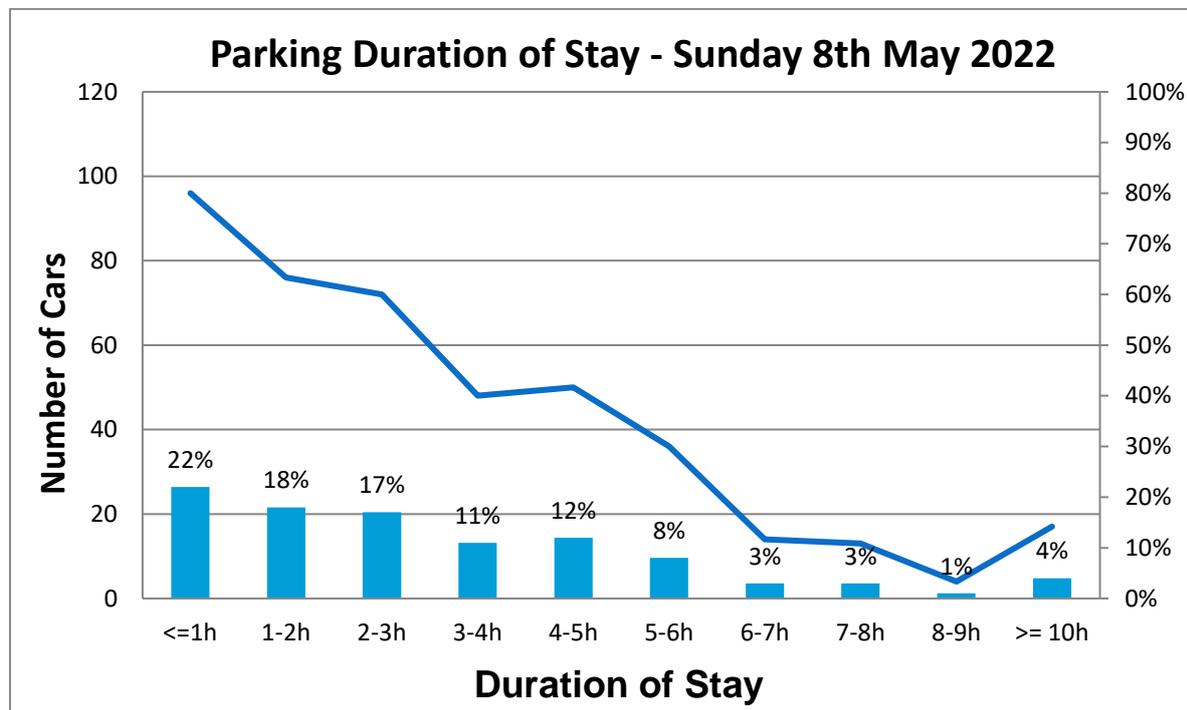


Figure 12 – Observed Duration of Stay (hours) – Sunday 8th May 2022

Table 10 below displays the occupancy rates for each parking restriction across each day, as well as the average rate. Table 11 shows the duration of stay that occurred at each parking restriction type for each day, including the average duration of stay and the average overstay. Table 12 displays the observed number of overstays for different parking restriction types across each day.

Table 10 – Observed Occupancy Rate per Parking Restriction Type

Parking Restriction	No. Spaces	Occupancy Rates / Day %						Average Occupancy Rate
		Monday	Wednesday	Thursday	Saturday	Sunday		
Unrestricted	296	32%	29%	31%	37%	38%	33%	
2P	51	64%	68%	63%	78%	75%	69%	
1P	55	57%	53%	60%	85%	77%	66%	
P10Mins	2	32%	100%	86%	100%	95%	83%	
Disabled Bays	10	29%	24%	34%	26%	34%	29%	
Hotel Reserve Parking	2	18%	64%	23%	14%	14%	26%	
3P Long Vehicle	4	5%	25%	7%	7%	5%	10%	
No Stopping (part time)	19	7%	15%	14%	19%	20%	15%	
3P Yarra Hotel	27	49%	52%	55%	19%	21%	39%	
Total	466							

Table 11 – Observed Duration of Stay per Restriction type (mins)

General Restriction	Yarragon Study Area Average DoS* (mins)						
	Monday	Wednesday	Thursday	Saturday	Sunday	Average DoS over survey period	Average Overstay
Unrestricted	106	93	94	116	146	111	N/A
2P	99	104	96	127	288	143	23
1P	61	62	68	152	298	128	68
P10Mins	42	84	106	67	315	123	113
Disabled	75	82	108	58	114	87	N/A
Hotel Reserve Parking	120	160	75	90	45	98	N/A
3P Long Vehicle	30	83	23	23	30	38	0
No Stopping (part time)	20	47	35	52	53	41	N/A
3P Yarra Hotel	117	141	123	42	45	94	0

*DoS refers to Duration of Stay

Table 12 – Observed Number of Overstays

General Restriction	Yarragon Study Area Overstays					Total
	Monday	Wednesday	Friday	Saturday	Sunday	
1P	64	90	83	0	NA	237
2P	46	55	42	0	NA	143

Note: Disabled Bays, Loading Zones and unrestricted areas were not included for analysis of overstays. There are no parking restrictions imposed on Sundays.

Overstay Areas

As seen in Table 12, overstay data was collected for the restricted parking zones. For the P10Mins, data was unable to be obtained due to hourly data collection. In the 1P zones the average overstay was 68 minutes, however this overstay figure is inflated due to the DoS on Saturday and Sunday, where Saturday only has restrictions in the morning and Sunday has no time restrictions on 1P spaces. The average overstay for 1P spaces on weekdays was 4 minutes. This situation is also relevant for the 2P spaces, with Saturday and Sunday data inflating the overstay calculation, where an average overstay of 23 minutes was observed. No overstay was seen for 2P spaces on weekdays only.

5.5.2 Compliance with Parking Restrictions

Section 5.5.1 above illustrated the duration of stay information. Below is a summary of the observations that were made:

Unrestricted Parking Areas

- Unrestricted parking areas within the study area are not being effectively used, with occupants utilising the spaces for an average of just under 2 hours (111 minutes).
- Shorter time restricted parking spaces saw the most overstay, while the longest time restricted parking spaces saw the greatest level of under-stay.
- Occupancy rates were between 29-38% suggests little demand for long-term parking
- The data indicates there is a greater demand for 1P and 2P parking within the study area.

1P Parking Areas

- The 1P parking spaces are all located along the southern side of Princes Highway and both sides of Campbell Street. The average duration of stay was found to be 128 minutes across the 5 days, and 64 minutes across weekdays. The shortest DoS was 61 minutes on the Monday, while the longest was 298 minutes on the Sunday. From analysing this data, it can be concluded that 1P may not be sufficient for the area and could be increased to 2P, as overstay is apparent across the entire period and just on

weekdays. It should be noted that increasing the time restrictions may see a reduction in parking turnover and a decrease in the number of short-term parking.

- An average DoS being higher than the allocated time for these parking spaces may be due to a lack of enforcement of the restrictions in the area. This could potentially be contributing to unwanted overstay parking practices.
- A total of 237 overstays were recorded across the study period for 1P parking spaces. Sunday was not included due to the removal of the time restrictions. The occupancy rates for 1P spaces ranged from 50-85%, with Saturday having the highest occupancy rate of 85%.

2P Parking Areas

- All the 2P parking in Yarragon is located on the northern side of Princes Highway service road where an average DoS of 143 minutes for all 5 days and 101 minutes across weekdays was observed. A total of 143 overstays was recorded across the study period, with Sunday not being included due to the absence of time restrictions. The range of occupancy rates for 2P parking has been calculated between 63% and 78%, indicating that there is a high demand for these spaces. The lack of demand for unrestricted spaces plus the demand for parking spaces between 1 to 2 hours could see some of the unrestricted parking converted to 2P to create more short-term parking and parking turnaround.

5.6 Princes Highway Service Road – Key Observations

The data analysis covers the entire study area; however, this doesn't accurately represent certain parts of the Yarragon CBD. Parking occupancy and duration of stay rates can vary across the town due to various factors. As such, the data has been broken down into areas to better show the parking usage patterns.

Princes Highway Service Road acts as the main road for Yarragon, hosting many of the local businesses including restaurants and cafes, tourist centres such as the hotel and motel, and several retail shops. As evident from the data, Princes Highway Service Road has the greatest supply of parking and the highest occupancy rates in the study area.

Princes Highway Service Road has a total parking supply of 123, this includes 33 unrestricted spaces, 51 – 2P spaces, 36 – 1P spaces, and three spaces for the disabled. A summary of the key observations for Princes Highway Service Road is provided below.

- Peak occupancy rate aligned with the entire study area (between 12:00-14:00pm), with the highest rate occurring at 13:00pm on the Saturday at 85%. The lowest occupancy rate observed during this timeframe across the 5 days was 72%.
- Across the 5-day period, most patrons stayed for an hour or less, with an average of 65%. This average is brought down due to Sunday duration of stay rates, likely due to businesses not operating on Sunday. The weekday average was 79% for patrons staying an hour or less.
- The following parking occupancy rates broken down by parking restrictions, is:
 - Unrestricted – 51%
 - 2P – 70%
 - 1P – 72%
 - Disabled Bays – 43%

Evidently, the 1P and 2P spaces are those that are used the most along Princes Highway Service Road, with around 70% occupancy rates for both. While it was observed that only a half of the unrestricted on-street spaces were occupied.

Table 13 below breaks down the on-street occupancy rates by parking restriction type across each day in the study period.

Table 13 – Princes Highway Service Road – Parking Occupancy Rates

Sections	Side	General Restriction	Princes Highway Service Road Average Daily Occupancies (%)						
			Supply	Mon	Wed	Fri	Sat	Sun	Average Daily Occupancy
From Petrol Station to Rollo Street	N	No Stopping	0	0	0	0	0	0	0
	S	Unrestricted	13	6	17	25	2	5	11
From Rollo Street to Murray Street	N	Unrestricted	6	38	29	29	85	79	52
	S	Unrestricted	8	72	84	59	64	50	66
From Murry Street to Campbell Street	N	2P 9:00AM-5PM Mon-Fri, 9:00AM-12:00PM Sat	20	58	57	56	78	82	66
	S	Unrestricted	6	85	80	85	65	70	77
	S	1P 8:30AM-6:00PM Mon-Fri, 8:30AM-1:00PM Sat	10	69	79	75	72	63	72
From Campbell Street to Loch Street	N	2P 9:00AM-5PM Mon-Fri, 9:00AM-12:00PM Sat	31	69	78	69	78	67	72
	N	Disabled	1	36	27	45	27	18	31
	S	1P 8:30AM-6:00PM Mon-Fri, 8:30AM-1:00PM Sat	26	69	65	73	83	72	72
	S	Disabled	2	64	18	32	86	73	55

Key findings from Table 13 include:

- The highest on-street occupancy rate observed on a weekday was 85% as seen on Monday and Friday in the unrestricted spaces between Murry Street and Campbell Street. These spaces are possibly utilised by people working / living in the area in need of all day unrestricted parking.
- The highest average on-street parking occupancy rate for of unrestricted spaces between Murry Street and Campbell Street saw the highest average occupancy rate at 77%.

The data shows that the 1P and 2P spaces are being used adequately, suggesting there is sufficient parking along the street, however with occupancy rates greater than 70%, there should be some consideration of converting some unrestricted spaces into shorter term parking. While it is unlikely demand will increase dramatically in the short term, the town will continue to grow over time and will increase the occupancy rates of these spaces.

Please refer to Appendix C for occupancy rats and duration of stays on the Princes Highway Service Road

5.7 Parking Analysis by Restriction Type

Figure 13 below displays the supply of parking broken down by the restriction types.

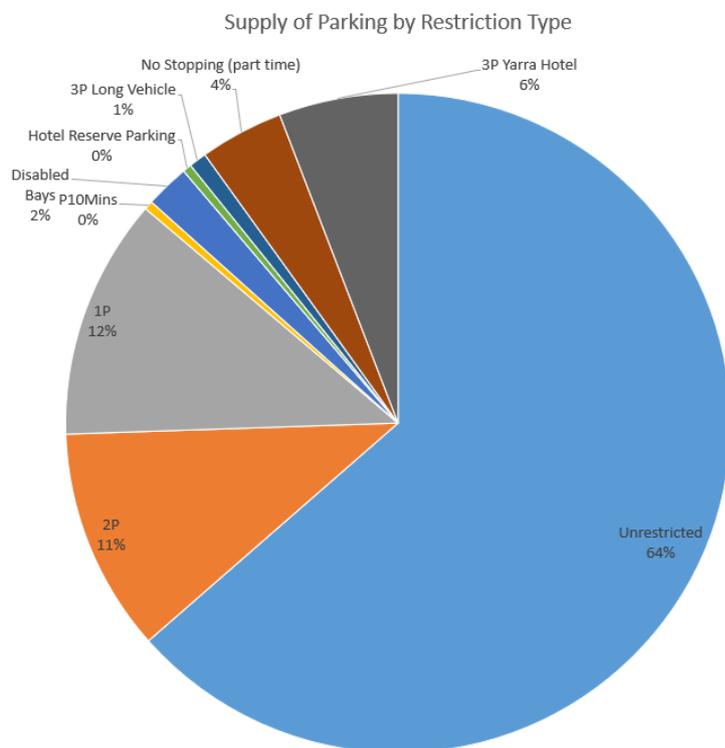


Figure 13 – Supply of Parking by Restriction Type

- Section 4.5 revealed that most patrons stay for an hour or less, however 1P parking only makes up 12% of the total supply. Additionally, 1 to 2 hours was the next longest duration of stay, however 2P parking only makes up 11% of the total supply. As analysed in section 4.6, Princes Highway service road is the main road for the CBD. It saw similar trends to the entire study area, with shorter term parking have the highest occupancy rates, and patron's duration of stay being an hour or less. This shows there is a greater demand for shorter term parking despite unrestricted spaces holding most of the supply (64%).
- The highest average occupancy rates were recorded in 1P and 2P parking spaces, with rates ranging around 60-70%. Although this isn't full, this rate is expected to increase as the town grows. With unrestricted parking ranging and average occupancy rate between 30-50% and making up 64% of the total supply, many of the spaces could be converted into shorter term parking, especially around local businesses to increase the turnover.

5.7.1 On-street Parking Areas

On-street and off-street parking have their own benefits. On-street parking is required in CBD areas hosting local businesses to ensure an ease of access to these services, especially to smaller/family-owned businesses. Keeping on-street parking to shorter time restrictions is common and generally encouraged to create a higher turn-around of vehicles throughout the day. Longer term parking (anything over 2P) is often discouraged as it slows parking turnover around the business area. Short term on-street parking generally contains a mix of 1/4P, 1/2P and 1P parking spaces to create a high parking turnover, ensuring high occupancy rates, and discouraging long duration of stay. Yarragon has a total of 237 on-street parking spaces and currently has no 1/4P, no 1/2P, and 2 P10mins parking spaces.

Additionally, 1P parking makes up about 12% of the total supply in Yarragon. The duration of stay data indicated that most patrons stay for one hour or less, showing a high demand for short term parking across the CBD area and suggesting a need to convert some unrestricted parking for shorter-term parking.

5.7.2 Off-street Parking Areas

Within the study area, a total of 229 spaces were recorded as off-street parking. A majority of this being unrestricted spaces, with 176 of the 229. All the off-street parking is within walking distance from local businesses and it's unlikely that short term parking patrons would have to compete with all day parking patrons due to the low average occupancy rate seen in unrestricted spaces. Regardless of low occupancy rates, these off-street parking spaces should be safe and accessible for vehicles and pedestrians and ideally have room to grow for future population growth.

Table 14 indicates the parking supply by restriction type for all off-street parking areas.

Table 14 – Off-street Parking Supply via Restriction Type

Parking Restriction	Off-Street Parking
	Supply
Unrestricted	176
Disabled Bays	7
Hotel Reserve Parking	2
3P Long Vehicle	4
No Stopping	13
3P Yarra Hotel	27

Unrestricted parking makes up most of the off-street parking, with 176 spaces being unrestricted. These off-street parking spaces have sufficient accessibility for the general public. A breakdown of the spaces and their locations can be seen below:

- Waterloo Carpark – 72 spaces.
- Yarragon Station Carpark (Council)– 12 spaces (+1 disabled bay).
- Loch St Carpark (Council) – 20 spaces (+1 disabled bay & +1 loading zone).
- Hanns Lane Northwest Carpark (Council) – 34 spaces (+2 disabled bays).
- Hanns Lane Northeast Carpark (Hotel) – 27 3P spaces (+2 reserved spaces & +1 reserved disabled bay).
- Hanns Lane South Carpark (Council) – 38 spaces (+4 3P Long vehicles, +12 Part time no stopping mobile library parking & +2 disabled bays).

6.0 Summary

Listed below are the major findings from the Yarragon CBD Parking Study:

1. The total of 466 parking spaces within the Yarragon CBD study area included 237 on-street spaces and 229 off-street spaces.
2. The highest occupancy rates were detected midday between 12pm – 2pm generally with the peak occupancy rate occurring at midday on Wednesday and Friday at 47%.
3. Campbell Street experienced the highest occupancy rate at 100% in the P10mins and 1P spaces on the Saturday, with the P10mins spaces maintaining 100% occupancy on the Wednesday too. Additional high occupancy rates include 86% in the unrestricted spaces at the Loch Street carpark, and 85% in the unrestricted spaces on Princes Highway Service Road on the Wednesday.
4. For the time restricted spaces, P10mins parking areas (2 available spaces) contained the highest occupancy rates with 100%. The next highest was in the 1P areas (55 available spaces) with 85% followed by 2P (51 available spaces) with 78%.
5. For the 296 unrestricted parking spaces available, the highest occupancy rate was 38% and the average occupancy was 33%.
6. The average duration of stay across each of the days was approximately 54% for patrons parking one hour or less and approximately 16% stayed between 1 to 2 hours. Demand for short term parking is higher than long term parking, however there is a much greater supply of unrestricted areas to accommodate this demand.
7. A lot of overstays were detected within short term parking areas (1P – 237 and 2P – 143), a total of 380 overstay vehicles were detected during the entire study period of five days in short-term parking bays.
8. The Yarragon Township Plan 2022 suggests a population growth rate of 2.3% per annum over the next 20 years, expecting a population of 1573 in Yarragon by 2031. Utilising today's highest parking occupancy rate of 47%, the expected average parking occupancy rate within the Yarragon CBD in 2031 is 59%.

7.0 Recommendations

Based on the parking study, the following recommendations are presented to improve parking within the study area. These recommendations are illustrated in Appendix D and described in more detail below.

Recommendation 1: Increase parking enforcement, as well as develop new initiatives and community education to ensure best parking practices

More enforcement and on a regular basis to assist with increasing parking turnover in the 1P and 2P restricted areas. An increase in parking enforcement will help develop better parking practices and create a high turnover of short-term parking. As such, underutilised long-term parking spaces will be utilised more. Additionally, educating the community via VMS boards or social media would help improve parking practices and increase parking turnover.

Recommendation 2: Convert unrestricted parking spaces on Princes Highway Service Road to time restricted spaces

Acting as the main road in Yarragon, Princes High Service Road is home to numerous local businesses. As such, a high parking turnaround is required. Duration of stay data showed that 79% of patrons stayed for an hour or less, indicating a high demand for short-term parking. It is recommended that 6 of the unrestricted parking space between Murray Street and Campbell Street become 1P spaces. Additionally, the 6 unrestricted parking spaces on the northern side of the road between Murray Street and Rollo Street should become 2P. This will assist in improving parking turnover near the local businesses. The unrestricted parking spaces between Murray Street and Rollo Street on the southern side will remain unchanged due to being located at residential property frontage, as well as providing parking for patrons requiring all-day parking. It is noted that changes to parking restrictions will only work well in conjunction with increased parking enforcement. As such, increased enforcement is required if timing restrictions are to change.

Recommendation 3: Convert 4 unrestricted parking spaces on Loch Street to long vehicle parking spaces

Loch Street contains 12 unrestricted parking spaces that have a maximum of 43% occupancy during weekdays. It is recommended that the 4 spaces on the eastern side are converted into long vehicle parking. This will assist drivers looking to stay overnight in Yarragon and is within proximity to the Yarragon motel. Additionally, long vehicle parking has also been requested by the community.

Recommendation 4: Convert unrestricted parking spaces in Loch Street carpark and Hanns Lane northwest carpark to 2P

It is recommended that the unrestricted parking spaces within these carparks (excluding the hotel parking) are converted to 2P parking. The Hanns Lane northwest carpark has between 30-40% occupancy on weekdays with an average stay of around 2P. While the Loch Street carpark has occupancy as high as 80%, its proximity to local businesses would benefit from high parking turnover, while underutilised unrestricted spaces nearby can be used for all-day parking patrons.

Recommendation 5: Reconstruction of Campbell Street and keep all on-street parking as 1P

Reconstruction of Campbell Street will improve the quality and safety of the road while acting as one of the main connectors through the town. Additionally, this was a frequent request seen in the community survey. It is recommended that all the on-street parking spaces remain as 1P to ensure a high parking turnover given the proximity of the street to the local businesses.

Recommendation 6: Construction of angle parking on south side of Hanns Lane near Rollo Street

Council has plans to renovate a section of land into a small community parklands area adjacent to Rollo Street, Hanns Lane, and Murray Street. Included in the plans is the construction of angled parking along Hanns Lane between Rollo Street and Murray Street. This will assist in improving safety and efficiency while parking and meets requests seen in the community survey.

Recommendation 7: Rectify all signage deficiencies

There are a few missing parking signs within the Yarragon study area. These deficiencies should be rectified to remove confusion and allow enforcement. Refer to section 3.0 for further details.

Recommendation 8: Improve parking wayfinding signage

Access to off-street parking areas should be clear to motorists to allow them to easily access and utilise these facilities. There is a general lack of wayfinding signage to inform motorists on the highway of available parking facilities. Improvements to parking wayfinding signage should be considered as per Figure 5 in section 3.2.

7.1 Implementation plan and costing

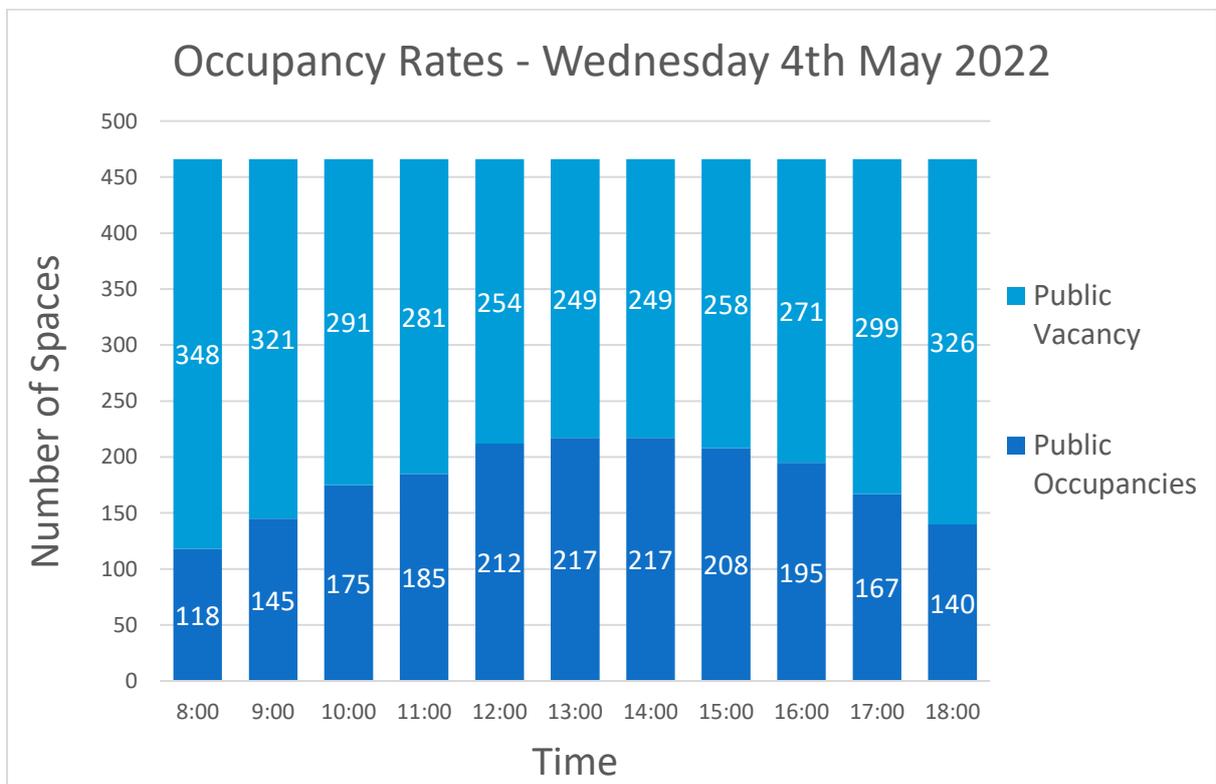
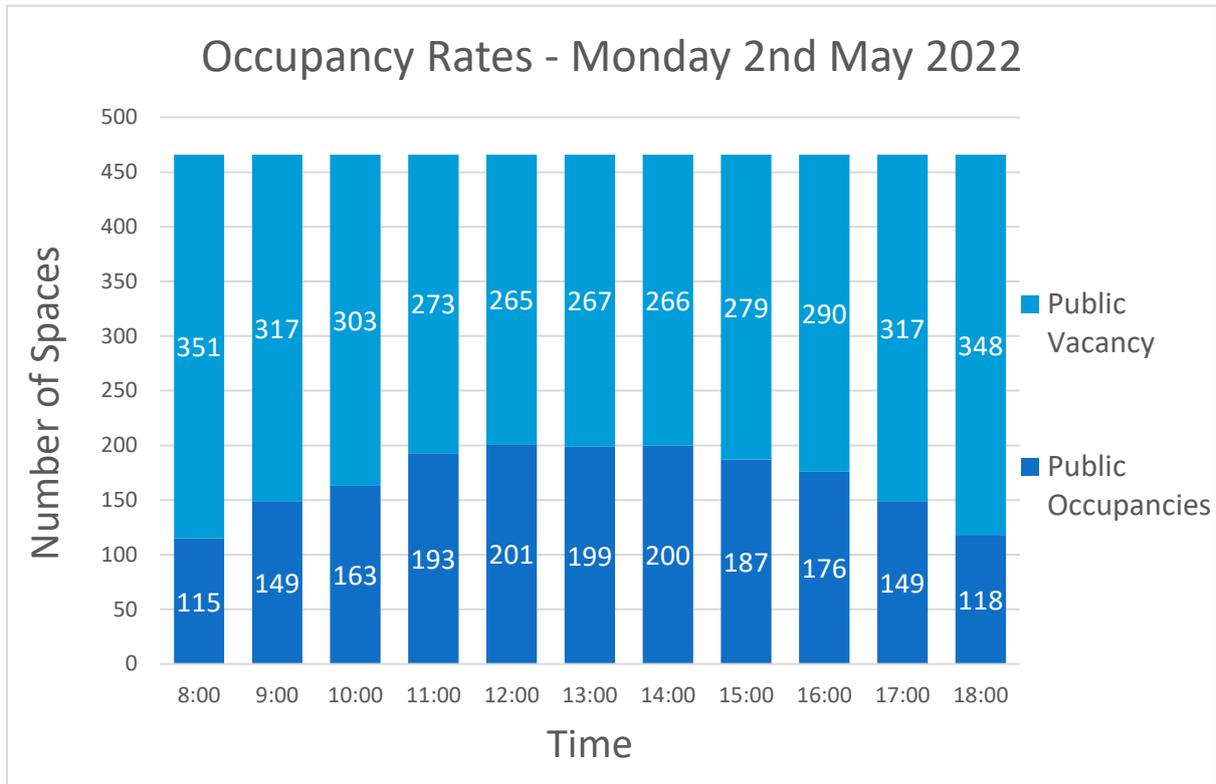
Table 15 – Yarragon CBD Parking Study Action Plan

Recommendation		Responsible	Timing	Cost Estimate
1	Increase parking enforcement, as well as develop new initiatives and community education to ensure best parking practices	Council's Compliance Team	Subject to success of new initiative for new Parking Enforcement Officer, considered from 23/24 FY	\$80,000 - \$100,000
2	Convert unrestricted parking spaces on Princes Highway Service Road to time restricted spaces	Council's Civil Asset Planning Team	Consider in 24/25 FY pending success of new initiative for parking enforcement officer in 23/24 FY	\$2,000
3	Convert 4 unrestricted parking spaces on Loch Street to long vehicle parking spaces	Council's Civil Asset Planning Team	FY 23/24	\$1,000
4	Convert unrestricted parking spaces in Loch Street carpark and Hanns Lane northwest carpark to 2P	Council's Civil Asset Planning Team	Consider in 24/25 FY pending success of new initiative for parking enforcement officer in 23/24 FY	\$2,000
5	Reconstruction of Campbell Street and keep all on-street parking as 1P	Council's Civil Asset Planning Team	TBD pending Council Road Reconstruction priorities from 23/24 FY onwards	TBD pending detailed design
6	Construction of angle parking on south side of Hanns Lane near Rollo Street	Council's Civil Asset Planning Team	TBD pending Council's priorities	TBD pending

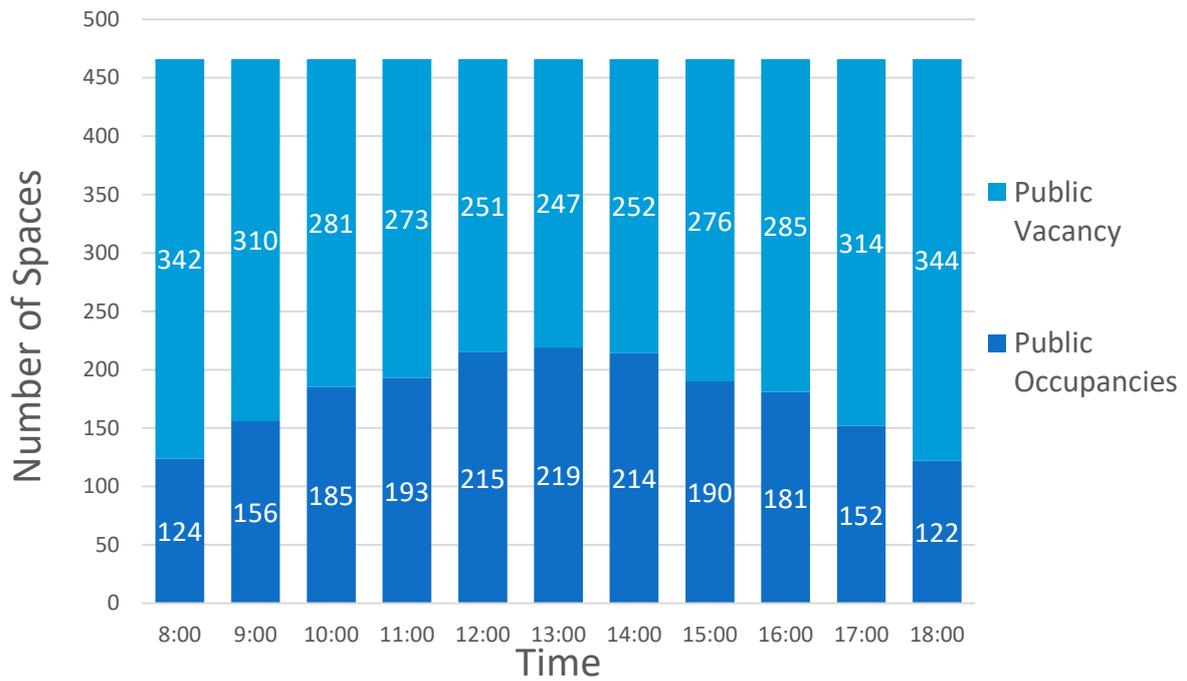
			considered from 23/24 FY onwards	detailed design
7	Rectify all signage deficiencies	Council's Civil Asset Planning Team	23/24 FY	\$1,000
8	Improve parking wayfinding signage	Council's Civil Asset Planning Team	23/24 FY	\$1,500

Appendix A

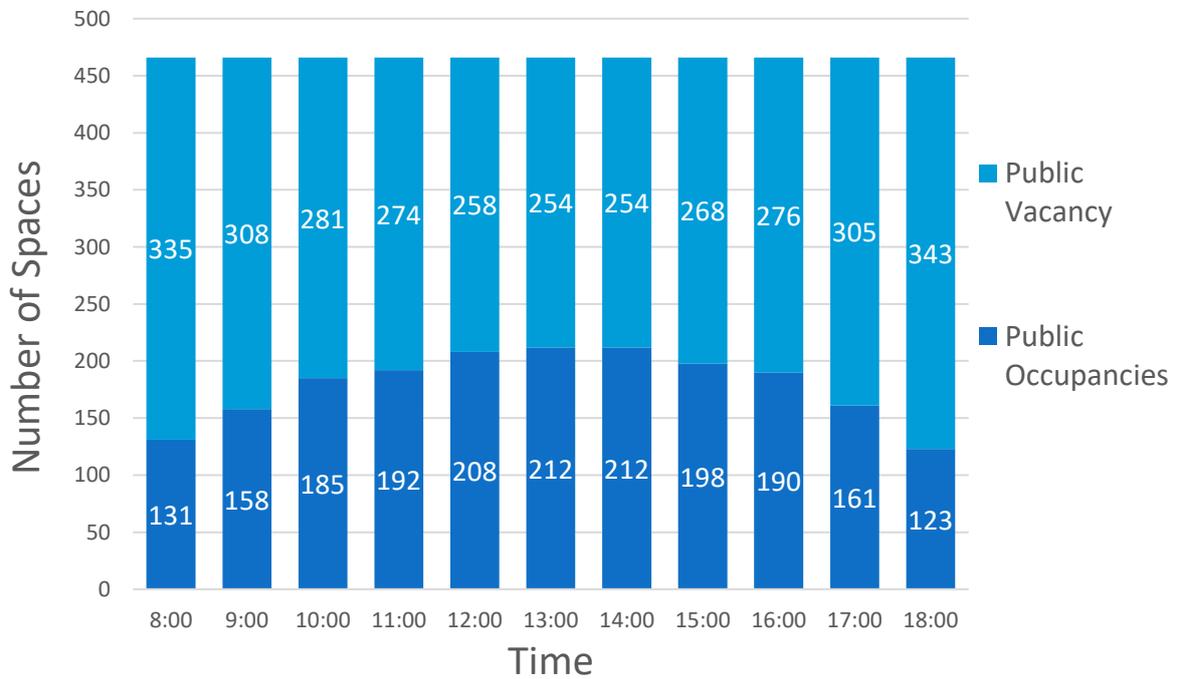
Yarragon CBD Parking Occupancy Rates



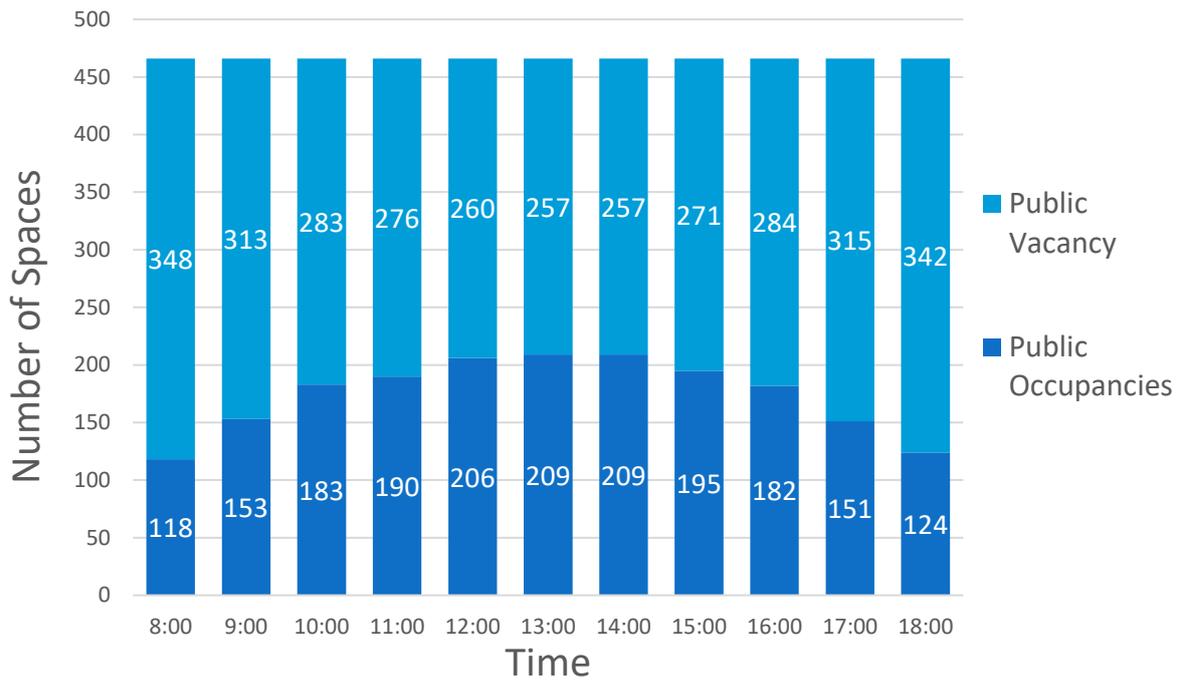
Occupancy Rates - Friday 6th May 2022



Occupancy Rates - Saturday 7th May 2022

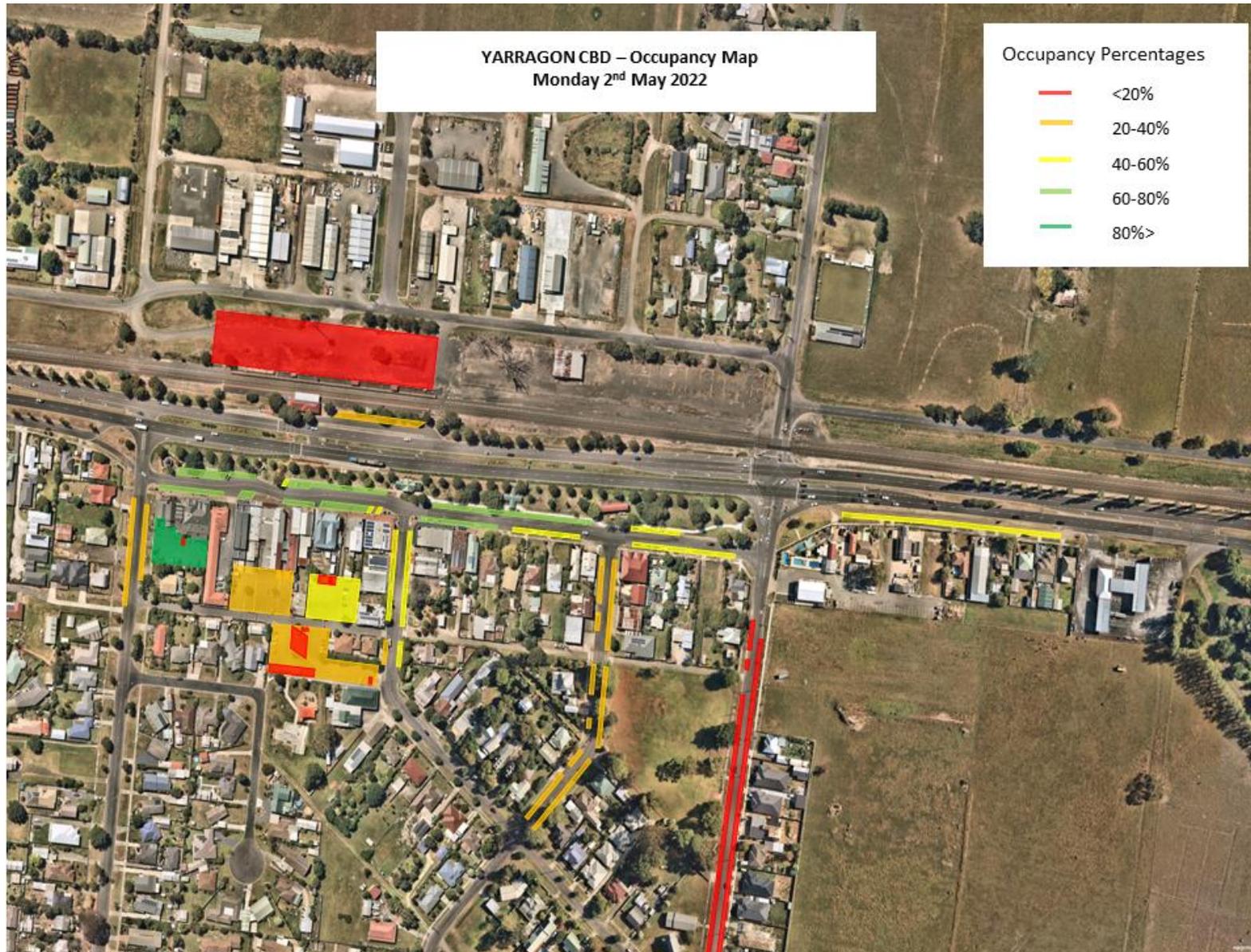


Occupancy Rates - Sunday 8th May 2022



Appendix B

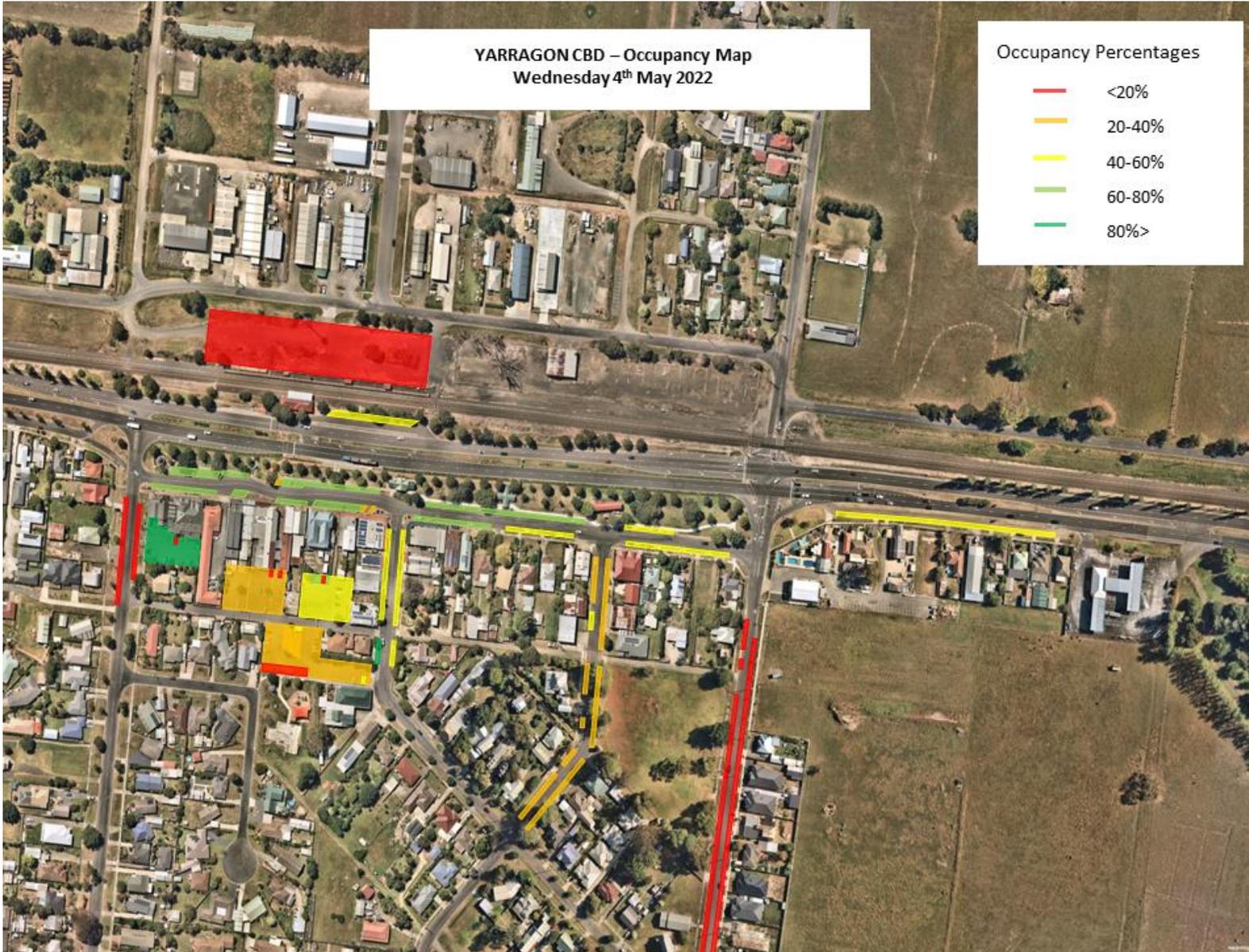
Yarragon CBD Parking Occupancy



YARRAGON CBD – Occupancy Map
Wednesday 4th May 2022

Occupancy Percentages

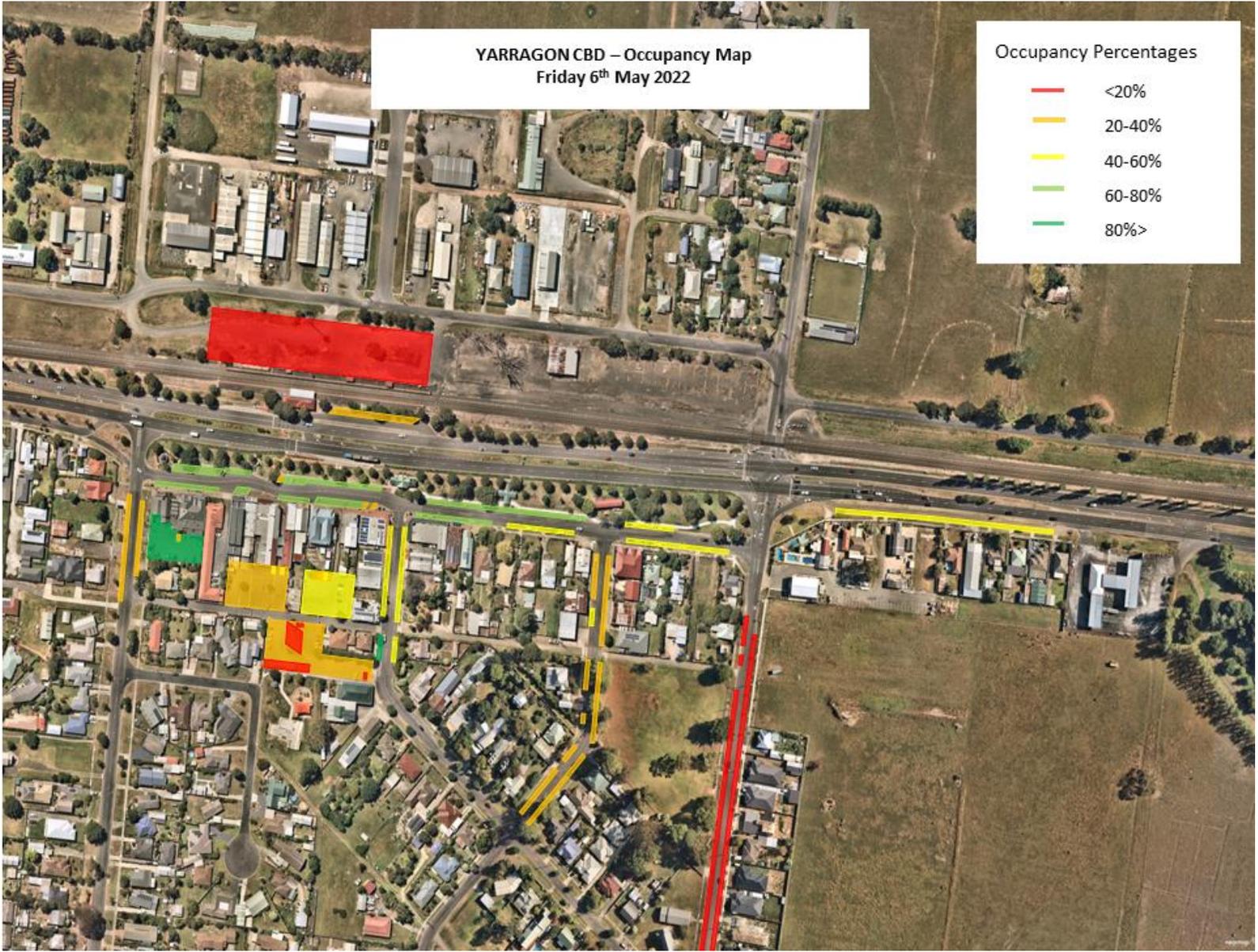
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- 20-40%
- 40-60%
- 60-80%
- 80%>



YARRAGON CBD – Occupancy Map
Friday 6th May 2022

Occupancy Percentages

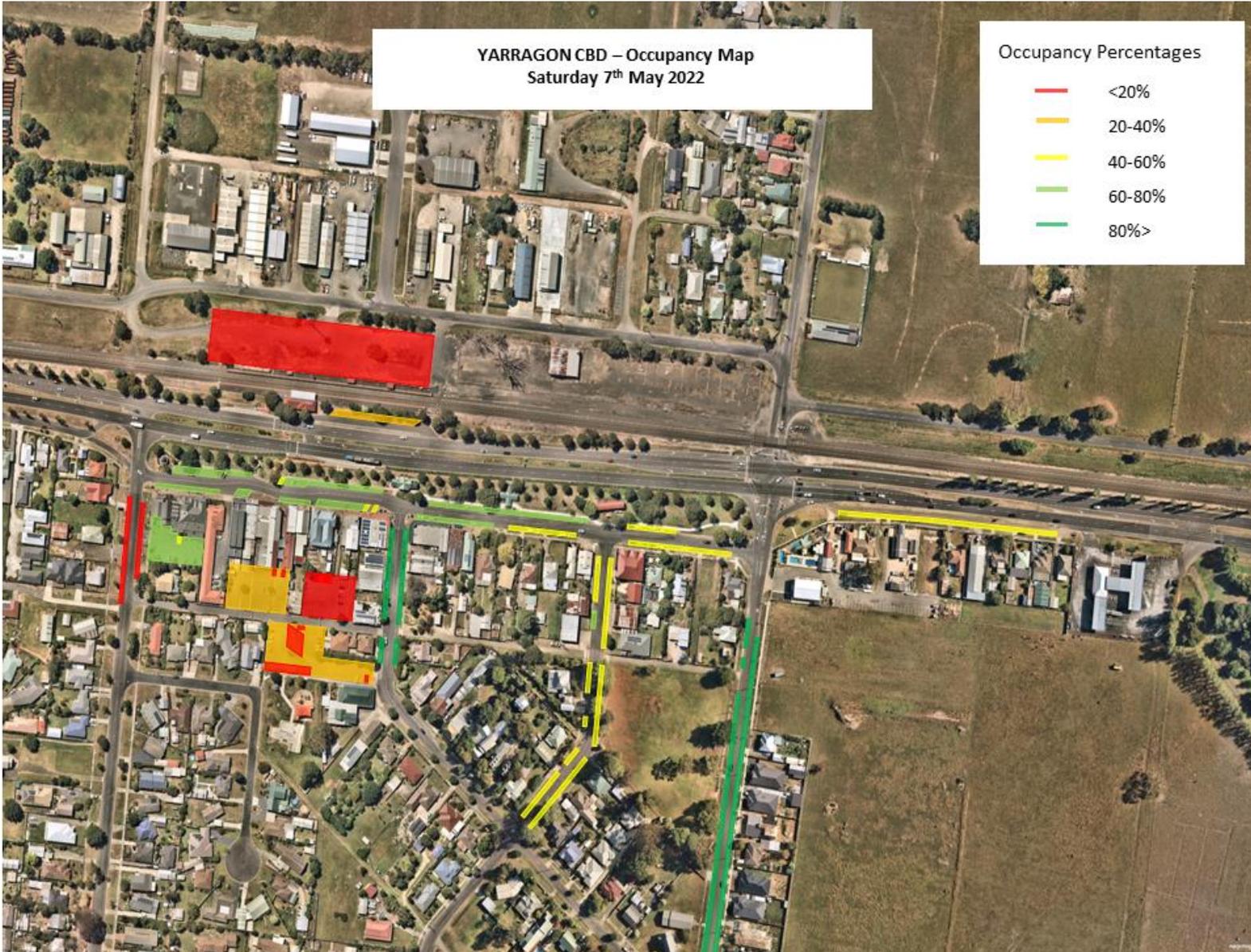
- <20%
- 20-40%
- 40-60%
- 60-80%
- 80%>



YARRAGON CBD – Occupancy Map
Saturday 7th May 2022

Occupancy Percentages

- <20%
- 20-40%
- 40-60%
- 60-80%
- 80%>



YARRAGON CBD – Occupancy Map
Sunday 8th May 2022

Occupancy Percentages

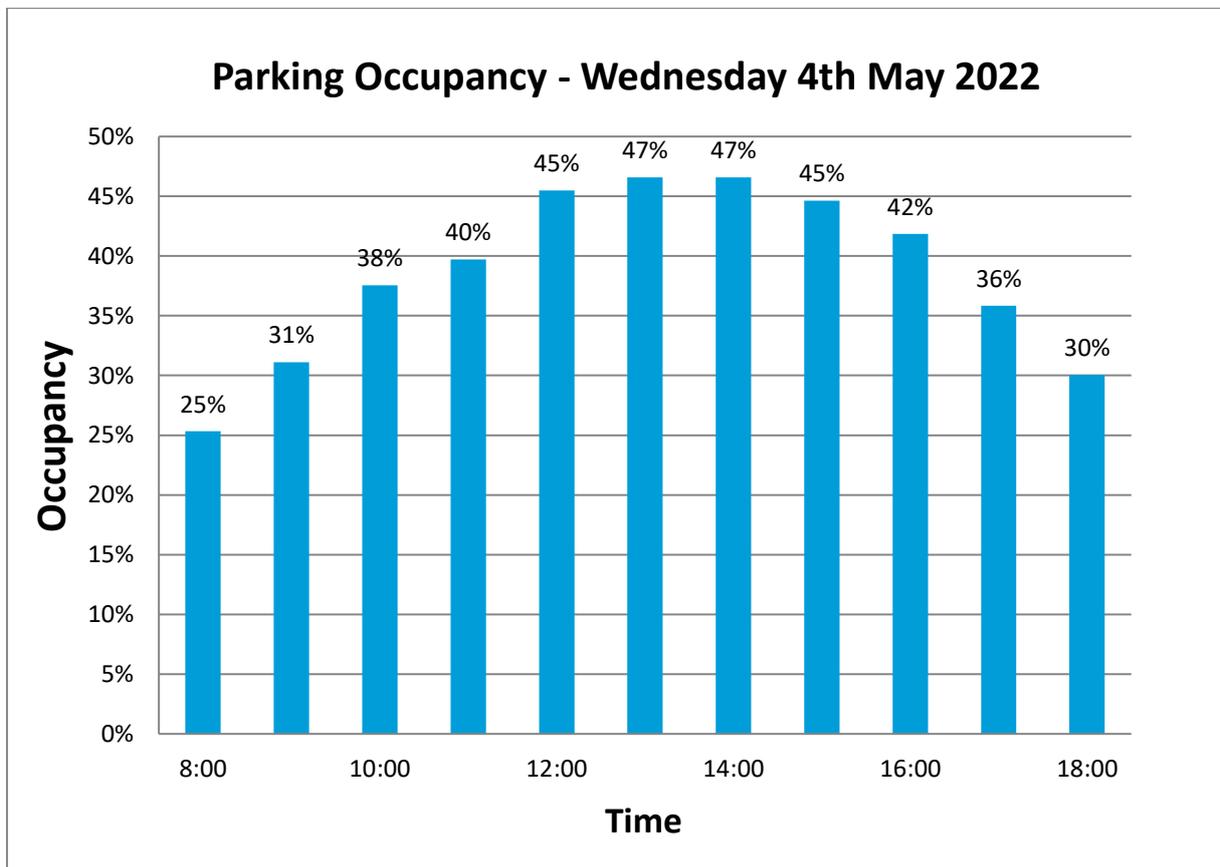
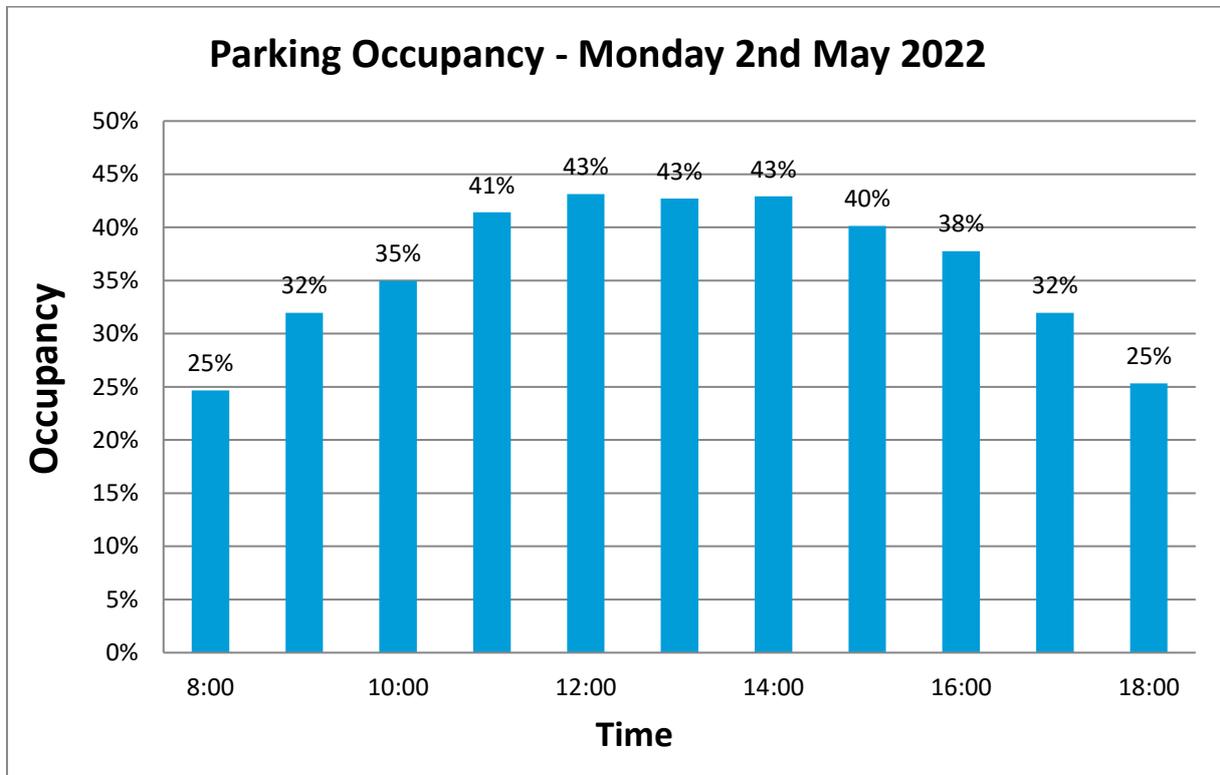
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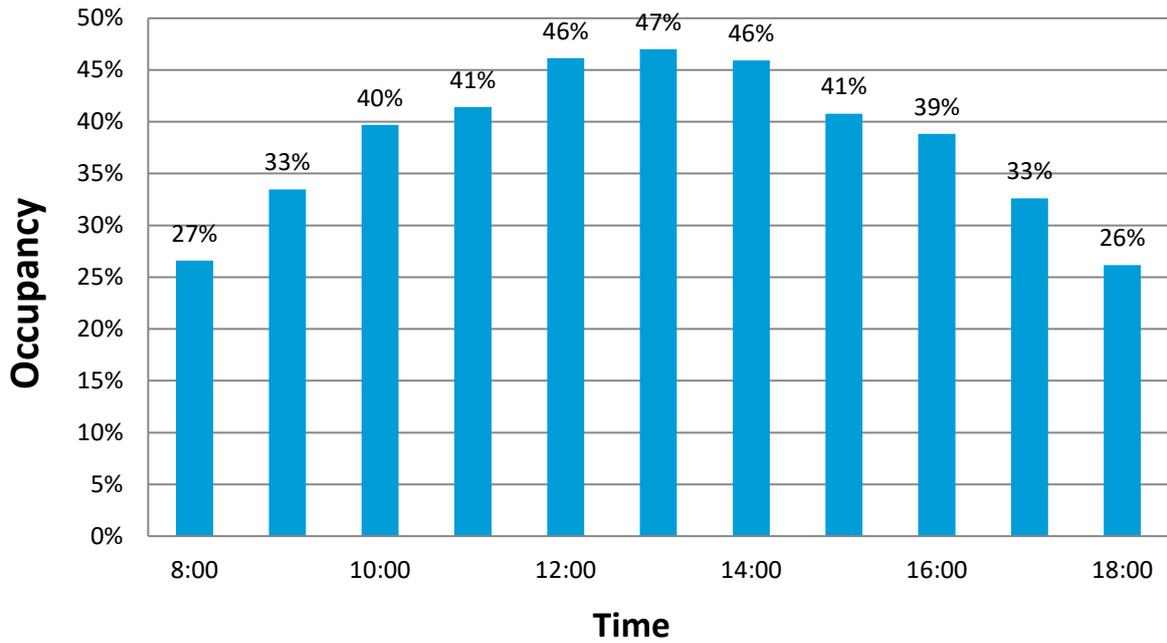
Appendix C

Princes Highway Service Road, Yarragon – Occupancy Rates & Duration of Stay

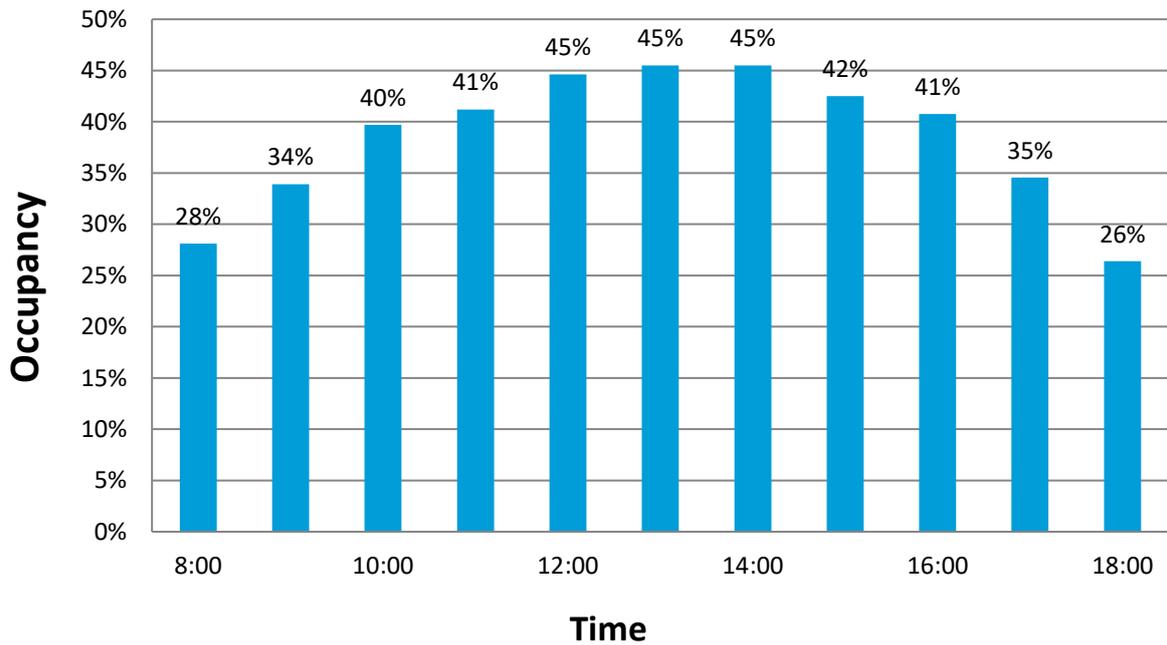
Parking Occupancy

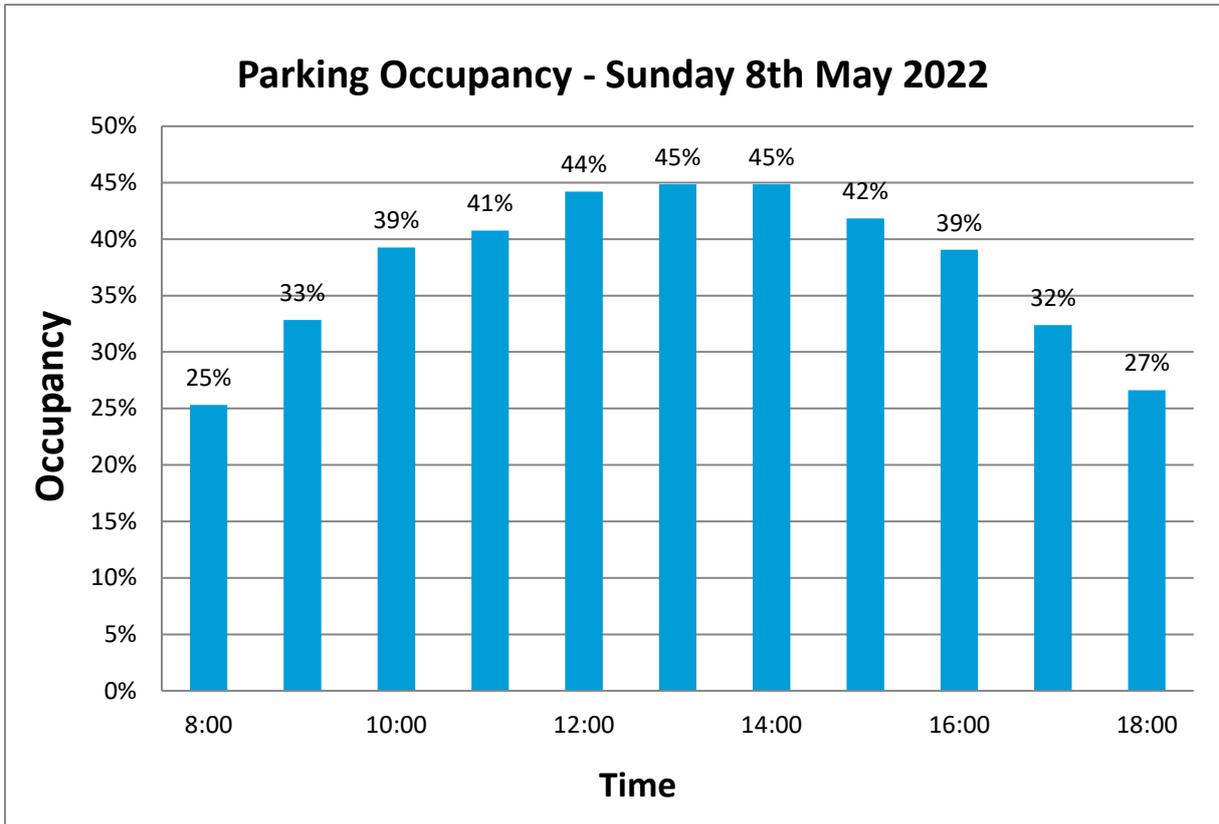


Parking Occupancy - Friday 6th May 2022

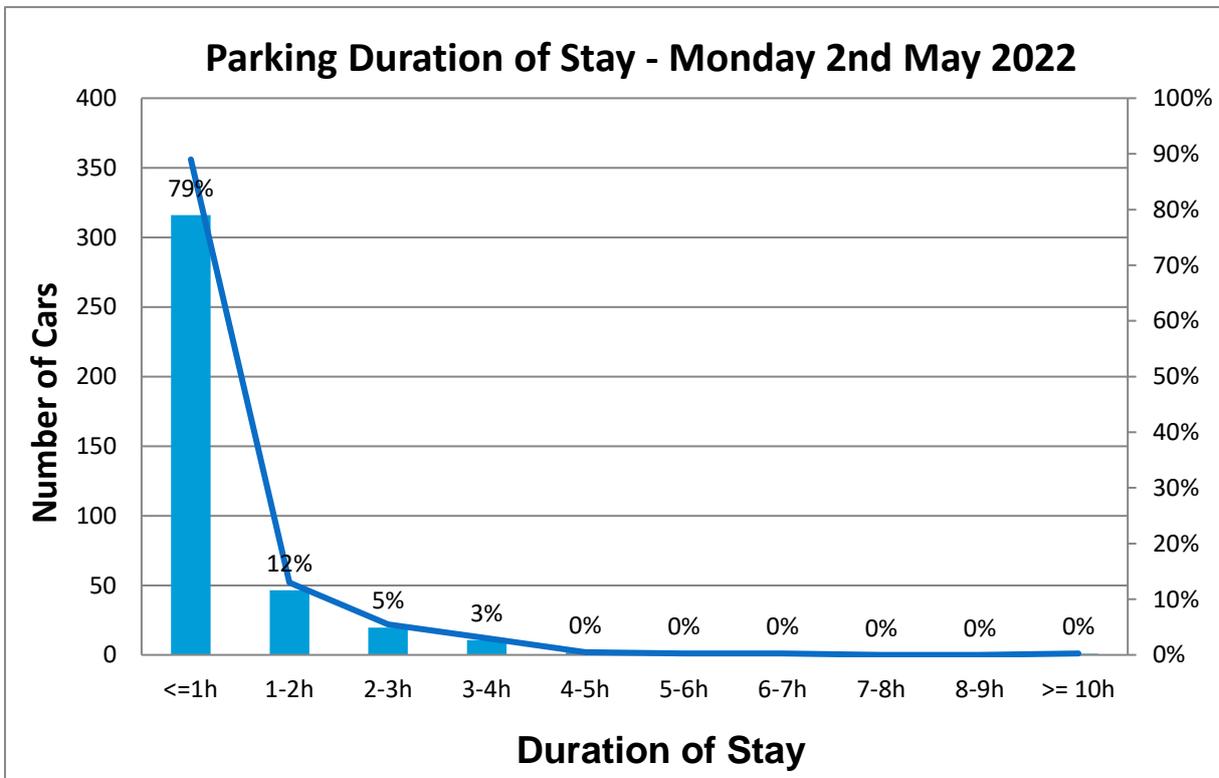


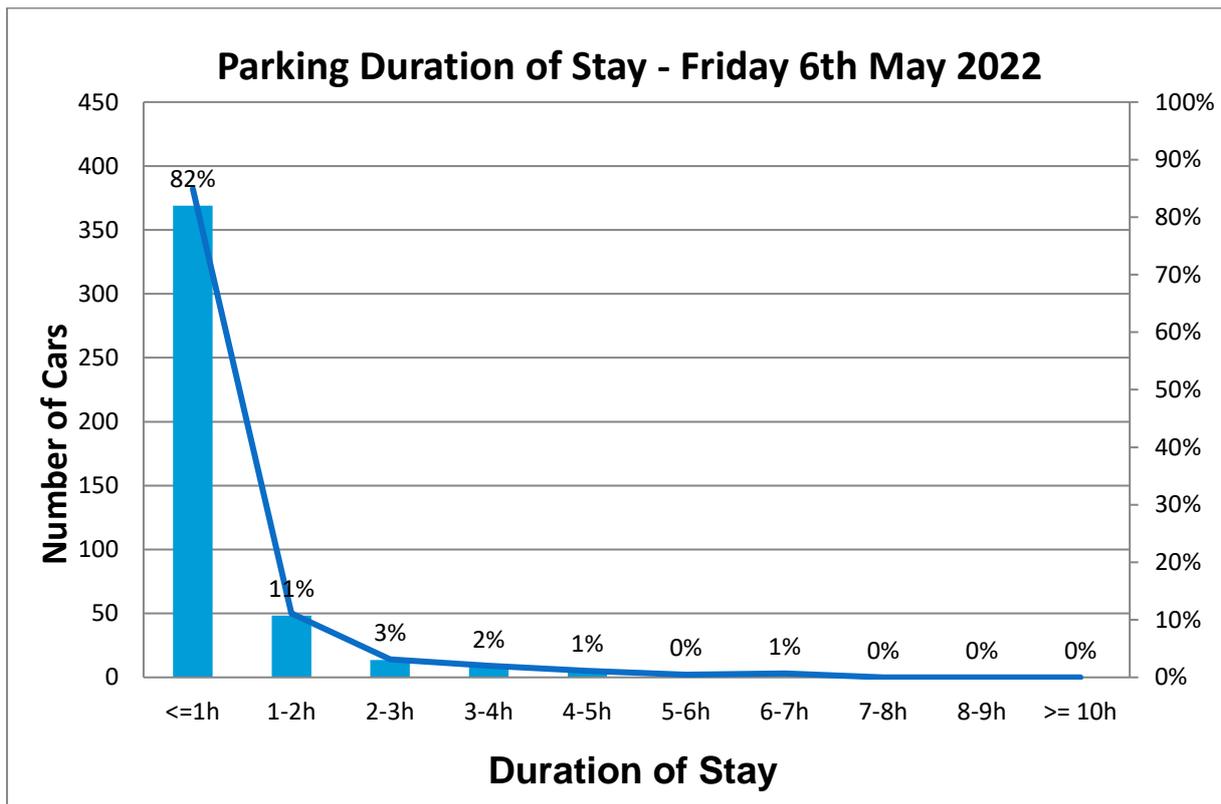
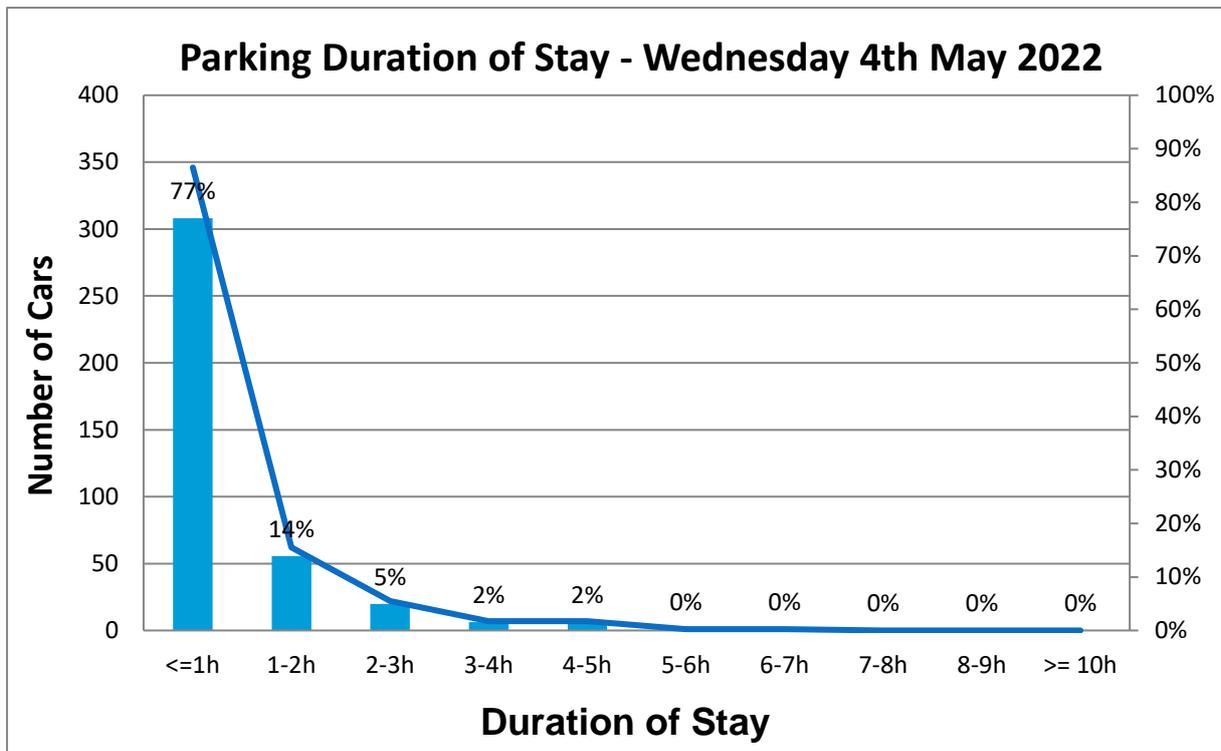
Parking Occupancy - Saturday 7th May 2022

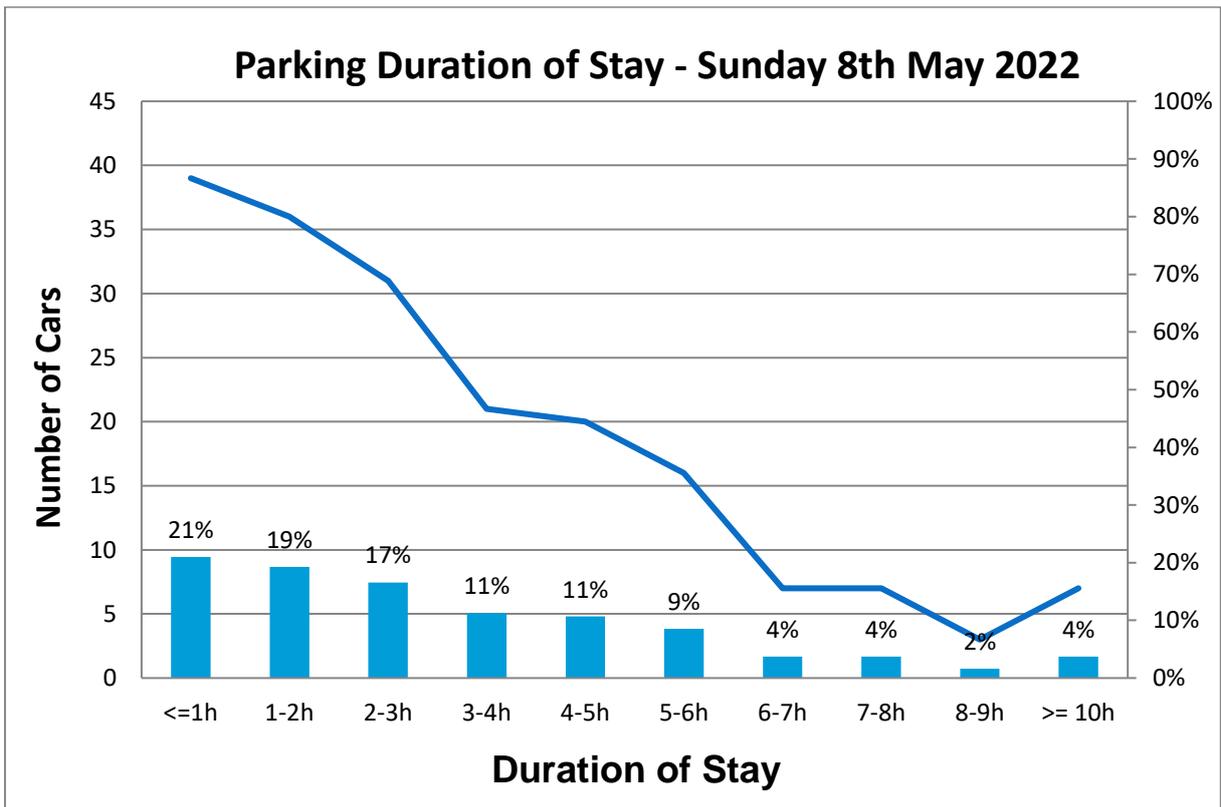
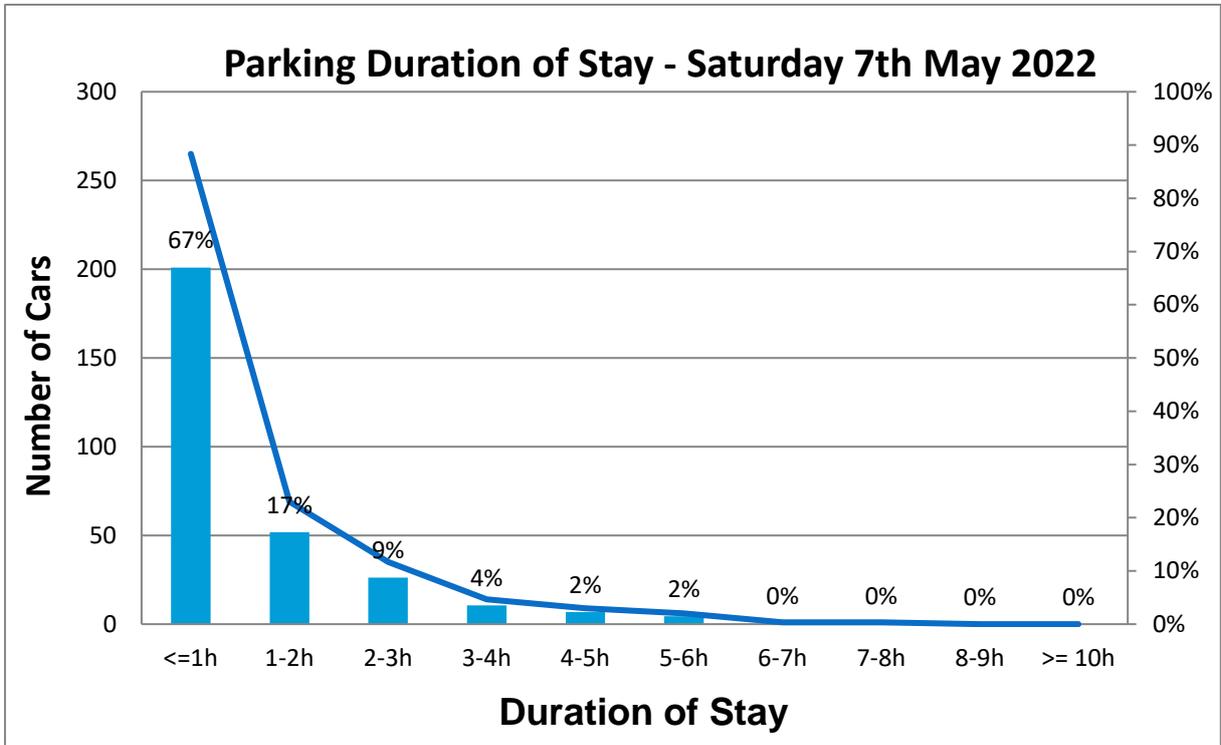




Parking Duration of Stay







Appendix D

Proposed Parking Restrictions (Recommendation)

